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FOREWORD BY THE PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES

During independence, a favourable situation was established in our country for the development of humanitarian and social sciences. This process, in turn, increased the importance of archaeology and anthropology, leading to the need to reconstruct work in archaeological and anthropological research at the Azerbaijan National Academy of Sciences.

One of the essential conditions for archaeology is the organisation of international scientific expeditions and joint archaeological excavations. I must admit that the Institute of Archaeology and Anthropology has consistently maintained a distinct scientific tradition in this area. However, compared to the tasks currently facing the Institute, the relationship cannot be considered sufficient to date. International scientific ties were significantly expanded in 2023-2024 by the leadership of the Institute of Archaeology and Anthropology. It is already observed that this relationship will become wider in 2025. In particular, the organisation of joint research by prominent archaeologists and anthropologists, including Denmark, Germany, Japan, South Korea in Fuzuli, Italy in Agstafa, the USA in Yardimli, and other countries, for joint searches and researches in the Azykh and Taglar caves, one of the oldest human camps in the world, will undoubtedly leave a deep mark on the development of the science of Archaeology and Anthropology.

Along with Archaeology, developing the science of Anthropology is one of the key tasks of the modern era. The work carried out in this direction at the Institute is to be expanded; in particular, special attention should be paid to the training of personnel in physical anthropology. In recent years, the publication of collections of scientific articles dedicated to current problems in the science of Anthropology, as well as the steps taken to train young specialists in physical anthropology, has allowed us to observe that a new wave is emerging in the field of anthropology.

One of the relevant assignments at the Institute of Archaeology and Anthropology that must be addressed is to eliminate the existing gap in the field of scientific journals. Recently, the Institute of Archaeology and Anthropology, aiming to fill this gap, has established the journals "Azerbaijan Journal of Archaeology and Anthropology" and 'Archaeological Heritage' and formed the editorial boards for these journals. At the April 2025 meeting of the Praesidium of the Azerbaijan National Academy of Sciences, permission was granted to publish the journals above, and the composition of their editorial boards was approved.

The planned publication of the "*Tempus Pontem: Azerbaijan Journal of Archaeology and Anthropology*" in English will also provide a broad platform for advancing archaeological and anthropological sciences in Azerbaijan, supporting the research activities of our scholars, and promoting innovations and scientific achievements in the field of archaeology on an international scale.

Good luck!

**Academician
Isa Habibbeyli**

FOREWORD BY THE EDITOR-IN-CHIEF

Our editorial team is honoured and pleased to present the inaugural issue of “*Tempus Pontem: Azerbaijan Journal of Archaeology and Anthropology*”.

The concept of this journal is to collect the main results from current field archaeology research in Azerbaijan. During the previous period, scientific research publishing in Azerbaijan faced significant challenges due to various objective and subjective factors. We strongly advocate for a flagship source of results from current archaeology excavations in Azerbaijan.

It is widely acknowledged that English has become the international language of science, playing a role similar to that of Latin and Arabic during the Medieval period. As the prominent scholar of the Islamic world, Abu Rayhan Muhammad ibn Ahmad al-Biruni, aptly stated: “A reproach in Arabic is more pleasing to me than praise in Persian; this dialect is only suitable for tales of Khusraw and night-time stories.” In addition to his native Khwarezmian, al-Biruni was proficient in Sanskrit, Persian, Arabic, Ancient Hebrew, Syriac, and Greek. By citing this passage, I do not intend to undermine the importance of national languages. On the contrary, al-Biruni’s scholarly prowess allowed him to establish principles for translating scientific terminology across different languages.

This understanding is precisely why the journal adheres to an English-only format, which aligns with its mission as reflected in its motto and logo: *Tempus Pontem*, meaning “Bridge of Time” in Latin. We aspire for this journal to serve as a bridge connecting the distant past with the present and as a platform for fostering connections among specialists from various countries working on the themes outlined in the journal’s mission.

Anthropology represents a distinct area of focus within the journal’s mission, reflecting its essential role within the broader humanities. The absence of articles related to anthropology in the journal’s inaugural issue can be attributed to the focus on field reports from collaborative expeditions conducted by local and international scientists. We anticipate that future issues will present significant research findings in this field for the global academic community.

The year is now 2025, and after many years, we are proud to present a journal that will highlight the results of archaeological and anthropological research within Azerbaijani scholarship, while also serving as a forum for academic discussion. This first issue introduces seven peer-reviewed articles based on original scientific research, contributing to the broader academic discourse. One of our primary objectives is to enhance the journal’s domestic and international impact, with the ultimate goal of elevating it to the status of a global academic publication. To this end, we have carefully assembled an editorial team of distinguished experts who have made significant contributions to their respective fields. I remain optimistic that my colleagues are well-equipped to ensure the journal’s academic rigour and success.

I would like to express my profound gratitude to the President of the National Academy of Sciences, the esteemed Academician Isa Habibbayli, for his unwavering and comprehensive support in preparing and publishing this journal. I also wish to extend my heartfelt appreciation to all the authors who contributed their scholarly articles to this issue. In the contemporary academic environment, writing a scientific article requires the collaborative efforts of co-authors and editors. In this case, the involvement of individual scholars was motivated solely by their enthusiasm, and their invaluable contributions to the review and editing process have been crucial.

Furthermore, I would like to extend my most profound appreciation to the editorial team and all the reviewers for their exceptional dedication and unwavering commitment to the journal’s mission.

Editor-in-Chief
Dr. Farhad Guliyev

DAMJILI CAVE REVISITED, GAZAKH, WEST AZERBAIJAN (2016–2023)

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Abstract

Archaeological investigations at Damjili Cave, conducted from 1953 to 1957, marked the beginning of substantial Palaeolithic research in Azerbaijan. The remains recovered by these field campaigns highlighted the cave's significant potential for understanding the cultural development of the South Caucasus. The material uncovered during these excavations sheds light not only on the Palaeolithic but also on later periods, including the Mesolithic and Neolithic. However, the details remained obscured for a long time due to the stratigraphic disturbance of the excavated trenches. To address this, we reinvestigated Damjili Cave from 2016 to 2023. Our study revealed a cultural sequence spanning the Mesolithic, Neolithic, Chalcolithic, Bronze Age, and Historic periods, all overlaying Middle Palaeolithic (Mousterian) deposits. Although the Middle Palaeolithic layer was disturbed by water activity, the other layers exhibited excellent stratigraphic preservation. Most importantly, discovering the stratigraphic occurrences of the Mesolithic and Neolithic occupation layers is crucial for understanding the origins of the food production economy. This finding is the first at a single South Caucasus site, underscoring the historical importance of Damjili Cave.

Keywords: *Mousterian, Mesolithic-Neolithic transition, Food production economy, South Caucasus*

Introduction

Damjili Cave, near Gazakh, is one of the memorial sites for the Palaeolithic archaeology of Azerbaijan (Fig. 1). Until the cave was investigated in 1953 by S. Zamyatnin, representing the Institute of History and Philosophy at the Academy of Sciences (Azerbaijan SSR), it was unclear whether any Palaeolithic sites existed in Azerbaijan. Zamyatnin's research at Damjili Cave yielded Palaeolithic artefacts from his small-sounding pit (Zamyatnin, 1958). Based on this research, M. Huseynov, who participated in the 1953 research, conducted full-scale excavations in 1956 and 1957 (Huseynov, 1957). These investigations provided clear evidence of human presence in Azerbaijan during the Pleistocene. This important finding encouraged a further pursuit of Palaeolithic sites in the republic, which resulted in the discovery of another site in nearby Dashsalakhly in 1958 and others in the Garabagh region in 1960, including Azykh and Taglar Caves (Huseynov, 2010). The Damjili Cave is thus considered a historical site that paved the way for the Palaeolithic investigations.

However, the Palaeolithic artefacts at Damjili Cave were recovered from disturbed deposits,

which prevented the excavators from determining their specific periods and nature. This is particularly unfortunate, as the disturbance of the deposits prevents archaeologists from accurately understanding the site's chronological context and the nature of human activity there, despite its historical significance. Moreover, the Palaeolithic pieces were reportedly found together with Mesolithic and Neolithic remains (Huseynov, 1957). In other words, the site of Damjili Cave may have been a multi-layered settlement spanning from the Palaeolithic to the Neolithic periods. As such, a site unknown in Azerbaijan even today, the cultural occurrences at Damjili Cave deserve re-evaluation. Following this, our team, the Azerbaijan-Japan joint expedition, conducted field investigations of this cave from 2016 to 2023. Although the primary purpose of our research was to investigate the Mesolithic and Neolithic periods, new findings were also obtained for the Palaeolithic research. The detailed results of this campaign have been published in Nishiaki *et al.* (2025). This paper provides an overview of the re-excavation of Damjili Cave.

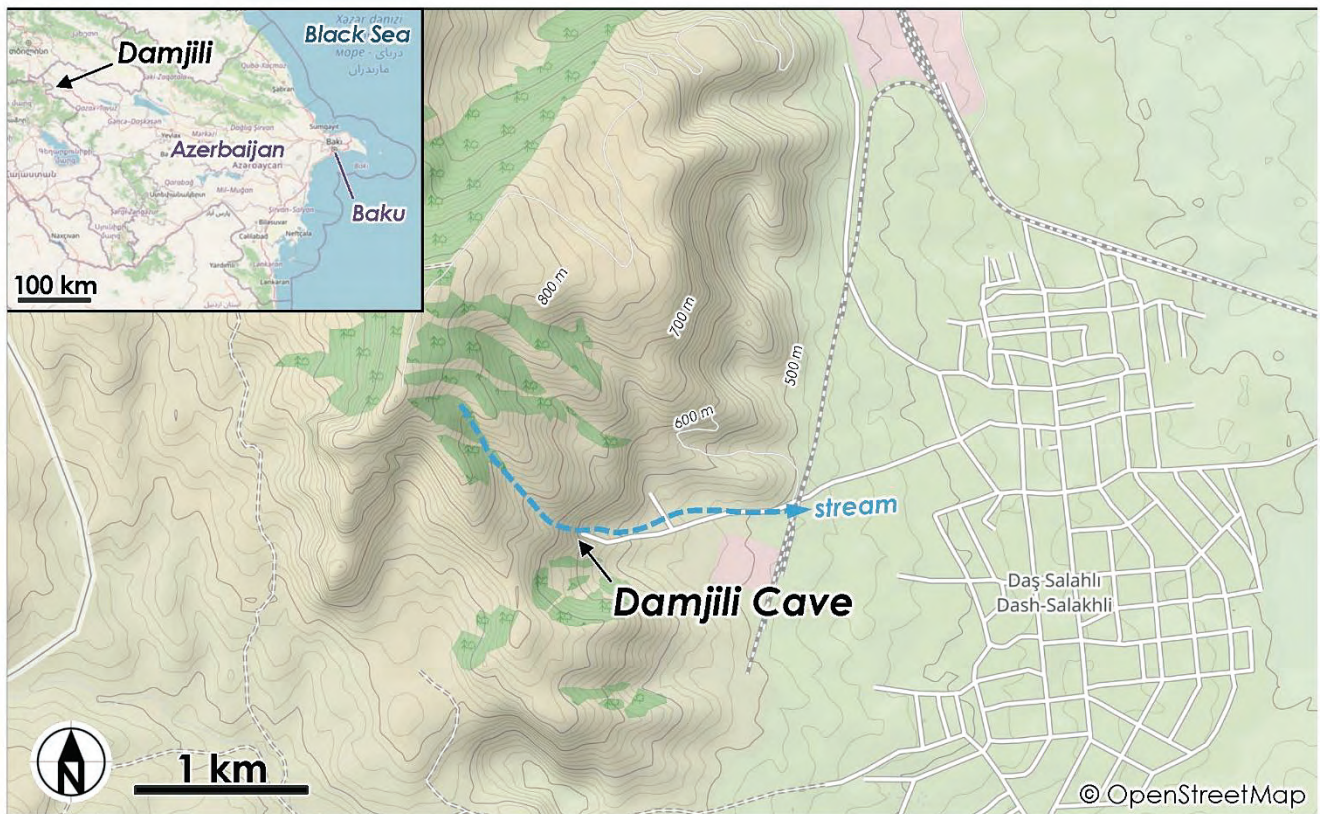


Fig. 1. Map showing the location of Damjili Cave (after Hayakawa & Ebina, 2025).

The cave setting and archaeological investigations in the 1950s

Damjili Cave is situated at the eastern foothills of the Avey Mountain, a rocky peak of Cretaceous limestone in western Azerbaijan (Figs. 1, 2). The nearest city is Gazakh, approximately 10 km to the southeast. The cave opens to the east, overlooking the right bank of the Kura Valley at an altitude of approximately 650 meters. As indicated by the name, *Damjili*, which means water droppings in Azerbaijani, the cave has several spots of water sources (Fig. 3). Our geomorphological study indicates that the cave represents a notch at a waterfall basin formed by a major *wadi* seasonally falling from the Avey Mountain (Fig. 1; Hayakawa & Ebina, 2025). The main cave measures approximately 27 m in width, 6 m in depth, and 4 m in height (Fig. 2). However, the concavity of the rock wall extends to the east for up to 70 m, with the eastern half designated as Damjili Cave 2 (Nishiaki *et al.*, 2025).

The excavations conducted in 1956 and 1957, as well as the sounding done in 1953, have not been adequately published (*cf.* Zamyatnin, 1958). However, the unpublished manuscript filed at the Institute of Archaeology and Anthropology in Azerbaijan indicates that the excavations were conducted in two main areas near the waterfall

basin (Fig. 3: A, B; Huseynov, 1957). A schematic section of one of the trenches is available, showing that the top part, more than 3 m thick, consists of water-derived secondary deposits, including historic cultural remains and limestone rubble. In contrast, the bottom layer, approximately 30 cm thick, contains prehistoric artefacts on virgin soil. As mentioned earlier, the archaeological assemblage from the bottom layer consisted of artefacts of different periods, ranging from the Palaeolithic to the Neolithic. In summary, the investigations in the 1950s were unable to identify the primary prehistoric cultural deposits.



Fig. 2. General view of the central area of Damjili Cave.

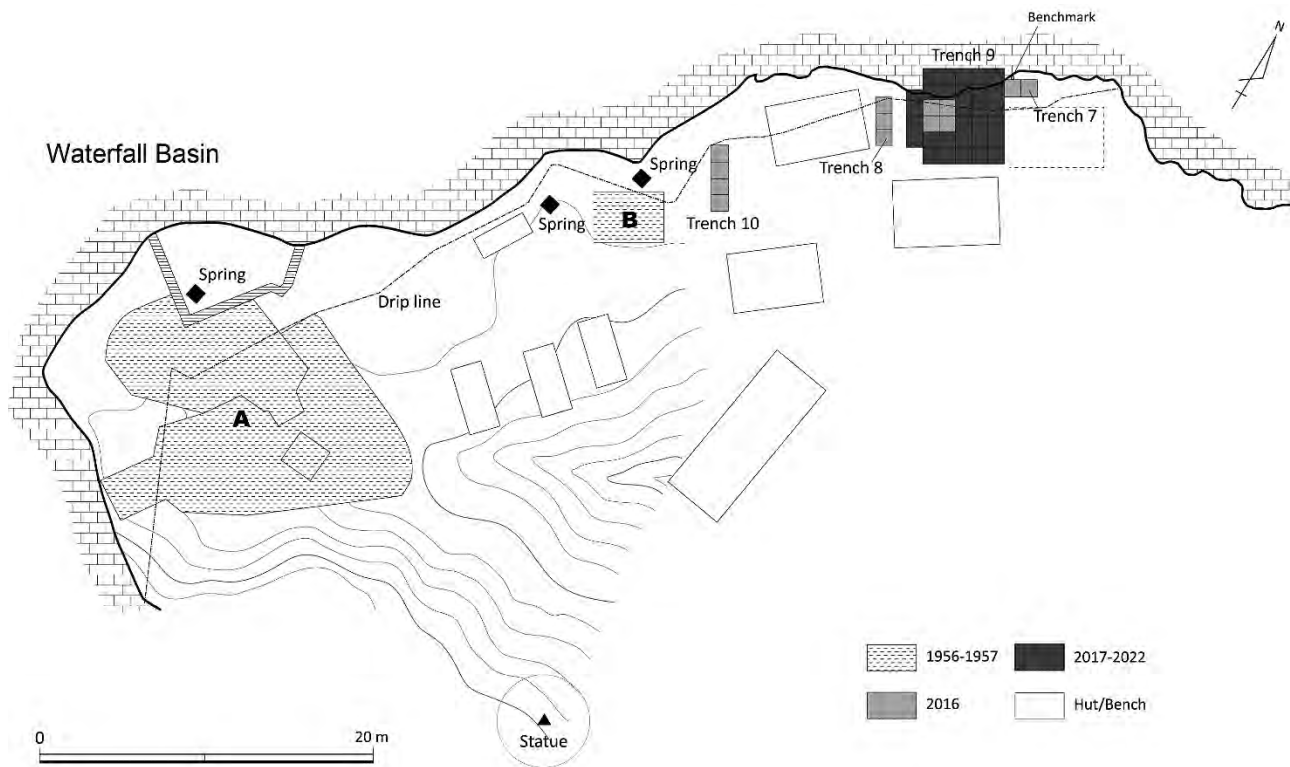


Fig. 3. Plan map of the central area of Damjili Cave. A, B: The excavation trenches of the 1950s.

Renewed investigations of Damjili Cave from 2016 to 2023

When we resumed fieldwork in 2016, the central area of the cave and its terrace were covered with asphalt and concrete, serving as a recreation park. Several huts and benches had been installed (Fig. 3). Therefore, we set up 10 trenches in the non-asphalted area to the east of the main cave to investigate the prehistoric deposits (Nishiaki *et al.*, 2019). These trenches are also distributed in the area defined as Damjili Cave 2 (Nishiaki *et al.*, 2025). The excavations of Trenches 8 and 10 in the central area (Fig. 3), located near the waterfall basin, revealed a thick secondary limestone gravel layer, as reported by Huseynov (1957). Additionally, they demonstrated that the area was used as a graveyard during the medieval period. Accordingly, the area closer to the waterfall basin was considered unsuitable for prehistoric research. It was also confirmed that the deposits in Damjili Cave 2, which extend east of the central area, are all of medieval origin (Trenches 1–6).

However, primary prehistoric cultural deposits were discovered in Trenches 7 and 9, which are situated at the eastern edge of the central area (Fig. 3). Consequently, we concentrated our excavations on the area surrounding these trenches from 2017 onwards. As the two were close together, they were merged as “Trench 9”. This measured 6 × 6 m in Units 1 and 2, while it was reduced to 3 × 4 m in Units

3 to 5 for safety reasons. The lowest deposits (Unit 6) were investigated over an even smaller 1 × 3 m area. The deepest point reached thus far was approximately 4.4 m below the present surface. However, the bedrock was not exposed. The sediments were divided into six cultural units, each radiocarbon-dated using 27 samples (Fig. 4; Nishiaki *et al.*, 2022):

1. Late Antique to Medieval; 2. Bronze Age; 3. Chalcolithic; 4. Neolithic; 5. Mesolithic; 6. Sterile. Note that the lowest part of Unit 5 and the top of Unit 6 are shaded to indicate stratigraphic mixing, which contained Palaeolithic and Mesolithic artefacts.

Unit 1: The historic period (6th to 10th centuries AD) may be divided into two phases, as suggested by two stratified architectural constructions and two groups of radiocarbon dates. Regardless, it is clear that the Damjili Cave was extensively occupied during the late Antiquity to the Medieval period. Notably, a series of graves were discovered in the main cave (Damjili 1), whereas only habitation features, such as pits and hearths, were found in Damjili Cave 2.

Unit 2: Bronze Age (c. 2800–2200 BC) yielded no archaeological features except for hearths. This sparse evidence of occupation may reflect a broader pattern observed in the South Caucasus during this period, characterised by highly mobile lifeways.

Unit 3: Chalcolithic period (c. 4500–3700 BC).

Similar to Unit 2, practically no structural remains were recovered in the unit. Again, this finding supports the prevalence of the mobile way of life during the Chalcolithic period.

Unit 4: Neolithic period (c. 6000–5300 BC) is the main period of human occupation at Damjili Cave, recorded as more than one meter thick in cultural deposits. The architectural remains of this unit were characterised by circular buildings (Fig. 5) similar to those discovered at early Neolithic settlements in the Middle Kura Valley, such as Hadji Elamkhanli Tepe and Göytepe, about 30 km to the southeast (Nishiaki & Guliyev, 2020; Nishiaki *et al.*, 2021). Also notable is the discovery of cobble-filled pits (Fig. 5: 2), which were very popular in the Neolithic of Southwest Asia and most likely to be a significant source of the Caucasian Neolithic. What should also be mentioned is the sporadic occurrence of pottery in the early stages of Unit 4. This phenomenon, indicating continuity in the aceramic Mesolithic way of life, has also been observed at Hacı Elamkhanli Tepe. Along with this finding, observations in other aspects, such as lithic manufacturing technology and the occurrence of small and ornamental finds, also indicate continuity from the Mesolithic to the Neolithic in the region.

Unit 5: Mesolithic period (c. 6500–6000 BC).

This cultural layer lies directly beneath Unit 4, which dates to the Neolithic period, suggesting a minimal chronological gap between them. The interval is estimated to be as short as a few decades, if not zero. The archaeological features of Unit 5 consist only of amorphous structures of limestone blocks and patches of ash distribution, suggesting an ephemeral nature of human occupation. Notably, the lowest part of this unit (Unit 5.3) contains both Middle Palaeolithic and Mesolithic artefacts (Fig. 6). Apparently, a heavy geological disturbance occurred during the earlier Mesolithic period, associated with a significant amount of limestone rubble.

Unit 6: Archeologically sterile deposits. This unit is a relatively homogeneous layer of hard, muddy sediments with a yellowish-

grey colour. As mentioned above, it is archaeologically sterile, except at the top, where it represents the disturbed layer. The sterile layer continues downwards more than one meter (Fig. 4). Although the bedrock has not yet been reached, our investigations are currently suspended at this layer.



Fig. 5. Neolithic features recovered at Damjili Cave.

Significance of Damjili Cave in the Prehistory of the Southern Caucasus

Our investigations from 2016 to 2022 confirmed the original excavators' statement that many of Damjili Cave's sediments had been disturbed due to a seasonal stream in Avey Mountain. However, this statement applies only to the area closer to the waterfall basin. We identified undisturbed prehistoric sediments in Trench 9 and its surroundings, approximately 30 m east of the waterfall basin, where excavations were conducted in the 1950s. The stratigraphic sequence of Trench 9 consisted of cultural phases from the Mesolithic, Neolithic, Chalcolithic, and Bronze Age, as well as the Antique and Medieval Periods (Fig. 4). The long, well-stratified, and solidly radiocarbon-dated archaeological sequence is the first in the archaeology of Azerbaijan, significantly contributing to the construction of the prehistoric chronology of the Southern Caucasus. This

represents the most important result of our reinvestigation of Damjili Cave.

Secondly, our research produced an invaluable dataset to document the Mesolithic to Neolithic transition at a single site for the first time in the Southern Caucasus. The emergence of the Neolithic culture, marked by the beginning of food production economies, has been a central subject in the archaeology of the Southern Caucasus for a long time. Due to the rapid development of research in this field over the last two decades, a consensus has emerged that the Neolithic period in the Southern Caucasus began around 6000 BC. However, the absence of research into the Mesolithic period immediately preceding the early Neolithic has prevented a consensus from forming about the

relationship between the indigenous hunter-gatherers and the farmers supposedly arriving from the northern Fertile Crescent. The cultural assemblages of Units 4 and 5 at Damjili Cave, in a stratified position, are thus a significant discovery, demonstrating that the Neolithic farming society, employing a food production economy based on cereals and animal husbandry, rapidly replaced the Mesolithic hunter-gatherer society in the South Caucasus. At the same time, the archaeological analysis of the material cultures of these two units reveals continuity from the Mesolithic to the Neolithic in various aspects, as mentioned earlier (Nishiaki *et al.*, 2025). These findings make the Damjili Cave one of the key sites for the Neolithization research of the southern Caucasus.

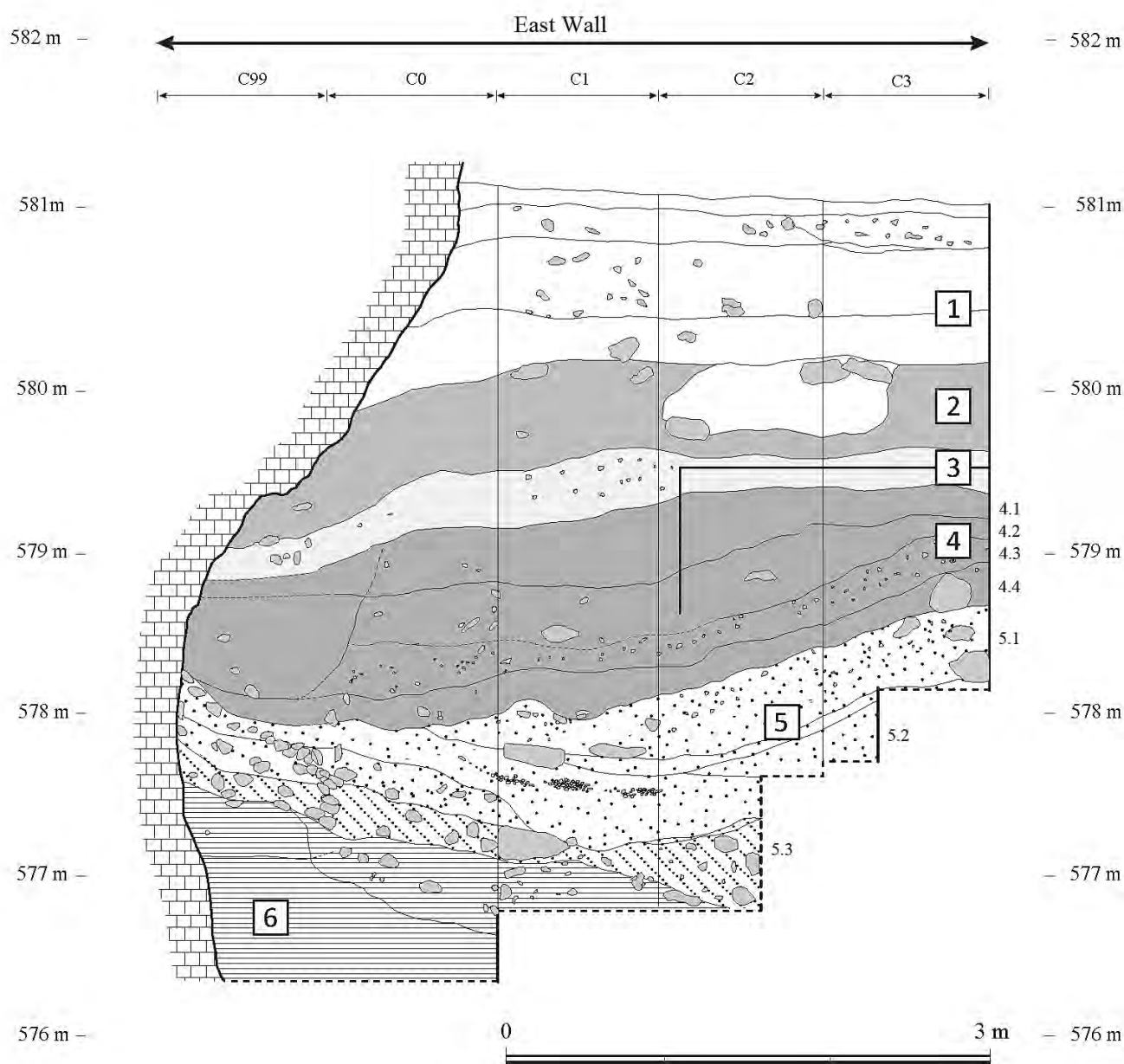


Fig. 4. Stratigraphy of Trench 9 of Damjili Cave

Thirdly, a new insight was obtained into the Palaeolithic occupations at this cave. The original excavators reported the occurrence of Lower, Middle, and Upper Palaeolithic materials, as well as Mesolithic and Neolithic materials, in a disturbed layer of virgin soil (Huseynov, 1957). However, our investigations identified only Middle Palaeolithic

artefacts for the Palaeolithic period in the new trench (Fig. 6). Given that the available drawings of the artefacts from the 1950s investigations also indicate the dominance of Middle Palaeolithic artefacts (Huseynov, 2010), this period may have been the main occupation phase of the Palaeolithic Damjili Cave.

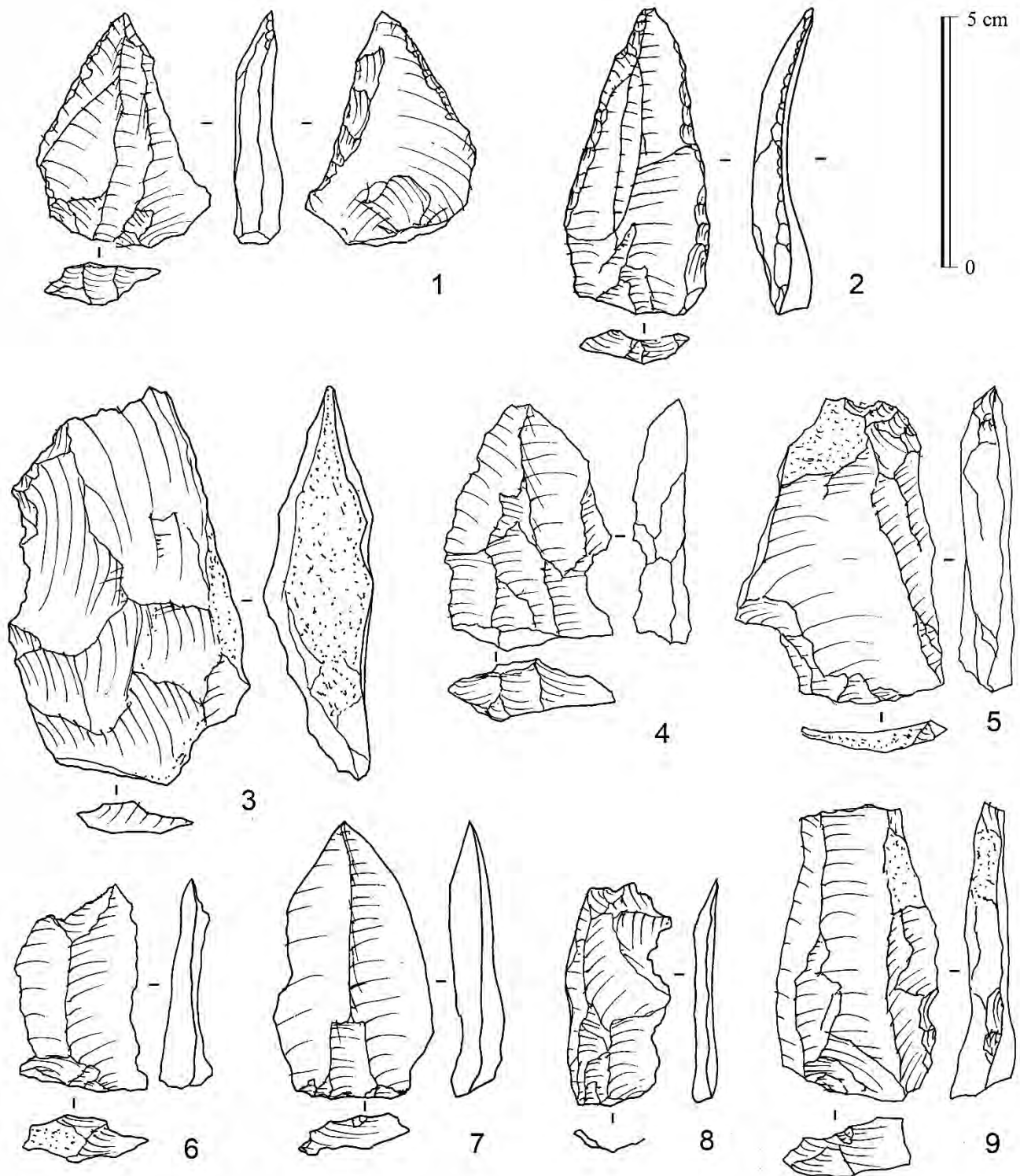


Fig. 6. Middle Palaeolithic artefacts recovered at Damjili Cave. 1, 2: Obsidian; 3–9: Flint and volcanic stones.

CONCLUSIONS

Our investigations, conducted at Damjili Cave after an interval of more than half a century since the first excavations from 1953 to 1957, benefited from a range of modern research strategies not available at that time, including remote sensing, geomorphological analysis, rigorous stratigraphic excavation techniques, archaeobotany, zooarchaeology, and radiometric dating. The research shed new light on the scientific significance of this historical site. The stratified sequence included chalcolithic levels rarely identified in West Azerbaijan. Furthermore, the discovery of Mesolithic levels directly below the Neolithic ones can be emphasised as the most important result of our investigations. It enabled us to interpret the processes of the Mesolithic to Neolithic transition at a single site. Our view from the Damjili Cave investigations is that the Neolithization of the Southern Caucasus was due to a combination of the contributions from indigenous Mesolithic hunter-gatherers and incoming Neolithic farmers.

Through the Palaeolithic remains, which attracted the early researchers to this cave in the 1950s, we could identify their provenance, at least in the eastern part of the cave. Heavy water

activities mixed them up with some likely Mesolithic remains. At the same time, our typological study indicates that all of the recovered Palaeolithic lithic artefacts belong to a Mousterian industry of the Middle Palaeolithic. To further investigate this period and determine whether there were Lower and Upper Palaeolithic occupations, as suggested by the original excavators, it is necessary to conduct more extensive excavations in this cave, which serves as a public recreation area.

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GARABAGH PALAEOLITHIC PROJECT: HUMAN ECOLOGICAL AND CULTURAL DYNAMICS DURING THE LATE PLEISTOCENE IN THE CAUCASIAN CORRIDOR. NEW ARCHAEOLOGICAL EXCAVATIONS AT AZYKH CAVE, AZERBAIJAN.

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Abstract

The evolution of the human behavioural repertoire is known to emerge from complex evolutionary trajectories influenced by environmental, demographic, and social factors. Such processes include key past population dynamics, such as expansion, fragmentation, isolation, recombination and periodic local extinction. These behavioural phenomena are known to be reflected in the variability of the archaeological material. Studying this variability is fundamental to understanding how past hominins successfully evolved, expanded, adapted, and changed over time. Such evolutionary trajectories are best suited for analysis on a regional scale, with a particular interest in regions where population migratory dynamics have been well-documented. The Caucasus is a crucial region for addressing these archaeological questions. Situated at the geographical intersection of Africa and Eurasia, the Caucasus is a corridor and, at the same time, an ecological refugium marked by a biodiversity of plants and animals, making it very attractive for continuous human occupation over time. This article presents a research project dedicated to addressing these questions during a key moment in our evolutionary journey, spanning MIS 7 and 2 (250-14 ka years). Here, we present and discuss the research project, including the research questions and goals, as well as the results of a first archaeological campaign at the archaeological site of Azykh.

Keywords: Garabagh Palaeolithic Project, Excavation, Survey, Lithic Techno-Typology, Azykh Cave

INTRODUCTION

The archaeological record of the Late Pleistocene indicates that a range of human behaviour comparable to that of modern hunter-gatherers emerged at different times, across various regions, and among different hominin taxa (Powell *et al.*, 2009). This pattern emerges from complex evolutionary trajectories, influenced by environmental, demographic, and social factors. Those demographic processes include past population expansion, fragmentation, isolation, recombination and periodic local extinction (e.g., Timmermann *et al.*, 2022, 2024). Climatic oscillations impacted past population dynamics (e.g., Ambrose, 2001; Levin, 2015; Stewart &

Stringer, 2012; Finlayson & Carrión, 2007). These processes and their manifestations in the material culture played a vital role in shaping the evolution of the behavioural repertoire of past hominins. Tracing and understanding these local, evolutionary trajectories are best suited for a regional scale, with particular interest in regions where population migratory dynamics are well-documented.

The Caucasian corridor is a unique place for this investigation (e.g., Belmarker, 2010). The Caucasus is a transcontinental region between the Black and Caspian Seas. Historically, this region has been considered a natural barrier between Eastern Europe and Western Asia, situated at the

geographical intersection of Africa and Eurasia. The region is today a biodiversity hotspot for plant and animal species, which includes many endemic species, resulting from the Late Pleistocene glacial and Early Holocene glacial retreat refugium conditions that allowed several species, including past hominins, to survive (Babazade, 2016; Vasey *et al.*, 2020). Climatic fluctuations, active volcanism, tectonics, and topographic variability during the Pleistocene likely created greater environmental heterogeneity than exists today (Vasey *et al.*, 2020; Golovanova, 2022). Due to its geographical position, the prevalence of a mosaic of environments with striking biodiversity and a variety of ecological resources distributed over short distances, make it a natural laboratory for testing models of hominin behavioural dynamics, including technological and cultural adaptations over time (e.g., Ambrose 2010; Premo & Kuhn, 2010; Hublin, 2015; Kuhn, 2004).

Located in the southern part of the Caucasian corridor, also known as the Lesser Caucasus, the region of Garabagh is geographically located in a natural corridor and refuge between the African continent and Eurasia (Vasey *et al.*, 2020; Vekua & Lordkipanidze, 1998; Trifonov *et al.*, 2019). Geologically, the landscape of the Caucasus Mountains is the result of tectonic activity between the Arabian and Eurasian plates during the Mesozoic and Cenozoic periods. While dominated by sedimentary and volcanic rocks, the geological areas are also characterised by Karstic systems, containing limestone rock shelters and caves. Thus, these formations are typically found in mountainous landscapes associated with deep valleys and river terraces. Such features in the landscape make it an attractive setting for hunter-gatherer groups, especially when facing climatic fluctuations. Therefore, these areas have the potential to preserve crucial evidence of Late Pleistocene human activities, enabling investigations into key aspects of the population's dynamics, including mobility, settlement patterns, and technology.

The Garabagh Palaeolithic Project: An Overview

Our research project aims to investigate the above-mentioned questions in the unique regions of Garabagh (Azerbaijan) in the Lesser Caucasus. In this region, several important Palaeolithic records

have been documented (Fig. 1). Although Azykh cave is the most well-known archaeological site, several other contexts have been documented and excavated in the past (studies conducted by Mammadali Huseynov in the 1960s and 1980s) (Huseynov 1965, 1974, 1985, Zeynalov 2010). Nevertheless, despite the enormous potential, this region lacks systematic archaeological research, focusing on different assemblages and using similar and comparable approaches. The rich Palaeolithic record provides a valuable basis for examining the influence of climate and mobility as key factors shaping subsistence strategies, as well as technological and cultural behavioural adaptations (Davis & Ashton, 2019). In this project, the economic models and socio-cultural lifestyles of our distant and close ancestors, as well as the understanding of the technological evolution of tools, which was part of the struggle for their survival, are investigated. Thus, there are different ways to test the technological evolution processes of the style, form, and models of prehistoric people's tools by using microscopical, traceological, and experimental replications.

In modern micro-archaeological analyses, it is not enough to observe artefacts under microscopes; for complex analyses, in addition to archaeological materials, microscopic analyses of artefact model types resulting from experimental studies are also necessary (Marreiros *et al.*, 2020). Despite the application of micro- and macro-microscopic analyses to archaeological research over the last 50 years, particularly in understanding the techno-typology of the lithic industry and prehistoric dietary and Palaeolithic economic models, Azerbaijan requires further Palaeolithic research. To fill this gap, Ejder Babazade conducted microscopic analyses in 2023 and 2024 at the MONREPOS TraCEr laboratory at the Leibniz Zentrum für Archäologie with the support of core and mobility grants from the Azerbaijan Science Foundation, to study the techno-typology of Garabagh Palaeolithic tools. Based on the Institute of Archaeology and Anthropology memorandum, the work is being carried out at the newly established "Azykh Archaeological Research and Analysis Laboratory" at Garabagh University (Babazade, 2024).



Fig. 1. Map with the location of the archaeological sites mentioned in the text.

Through a diachronic perspective, this project investigates the significant technological changes that marked the evolutionary journey of hominins during the Middle-to-Upper Palaeolithic transition in the Caucasian region. Human occupation during this period has been reported from the archaeological sites of Taglar, Zar and Azykh (Huseynov, 1965; 1985; 1985, Jafarov, 2017; Zeynalov *et al.*, 2010; Doronichev, 2008; Adler & Tushabramishvili, 2004; Doronicheva *et al.*, 2023; Vasilyev & Amirkhanov, 2018; Kazimova, 2001; Golovanova & Doronichev, 2003). By investigating key Palaeolithic occupation sites, this project examines diachronic changes in hunter-gatherer settlement and mobility patterns, as well as their relationship with the landscape and natural resources, ultimately consolidating late hominin populations in this region. This project aims to create a comparative framework that documents the behavioural repertoire between MIS 7 and 2 (250-14 ka years) in Garabagh, with various temporal and spatial scales. This scheme will examine the interconnections between environmental and behavioural changes in the region by combining two closely related areas of research: fieldwork, including survey and excavation, and material analysis. Based on the above-mentioned research questions, the project focuses on key areas and archaeological sites which show high archaeological potential for the project. In 2024, the project was initiated with a field season

in August. Archaeological investigations focused on the archaeological site of Azykh Cave in Azykh 2 and Azykh 5 (Fig. 2). The archaeological works carried out during this field season are detailed here, along with the research scope and background of the project.

Archaeological Sites and Research Methods

This project is part of an ongoing collaboration between the Leibniz Centre for Archaeology (Germany), the Institute of Archaeology and Anthropology (ANAS), and Garabagh University (Azerbaijan). The long-term project also aims to build a collaborative research framework between institutions and countries. During our fieldwork, we identified new areas of high archaeological interest and revisited previously known sites.

This approach combines field investigations with a thorough review of all existing bibliographies and available archaeological records. The material analysis involves studying all archaeological remains recovered during the current fieldwork, as well as material from earlier excavations and collections stored at the National Academy of Sciences and the National Museum of History of Azerbaijan. While focusing on stone tools and faunal analysis, other macro- and micro-remains, such as botanical remains, are recorded and collected, along with samples for sedimentary analysis.

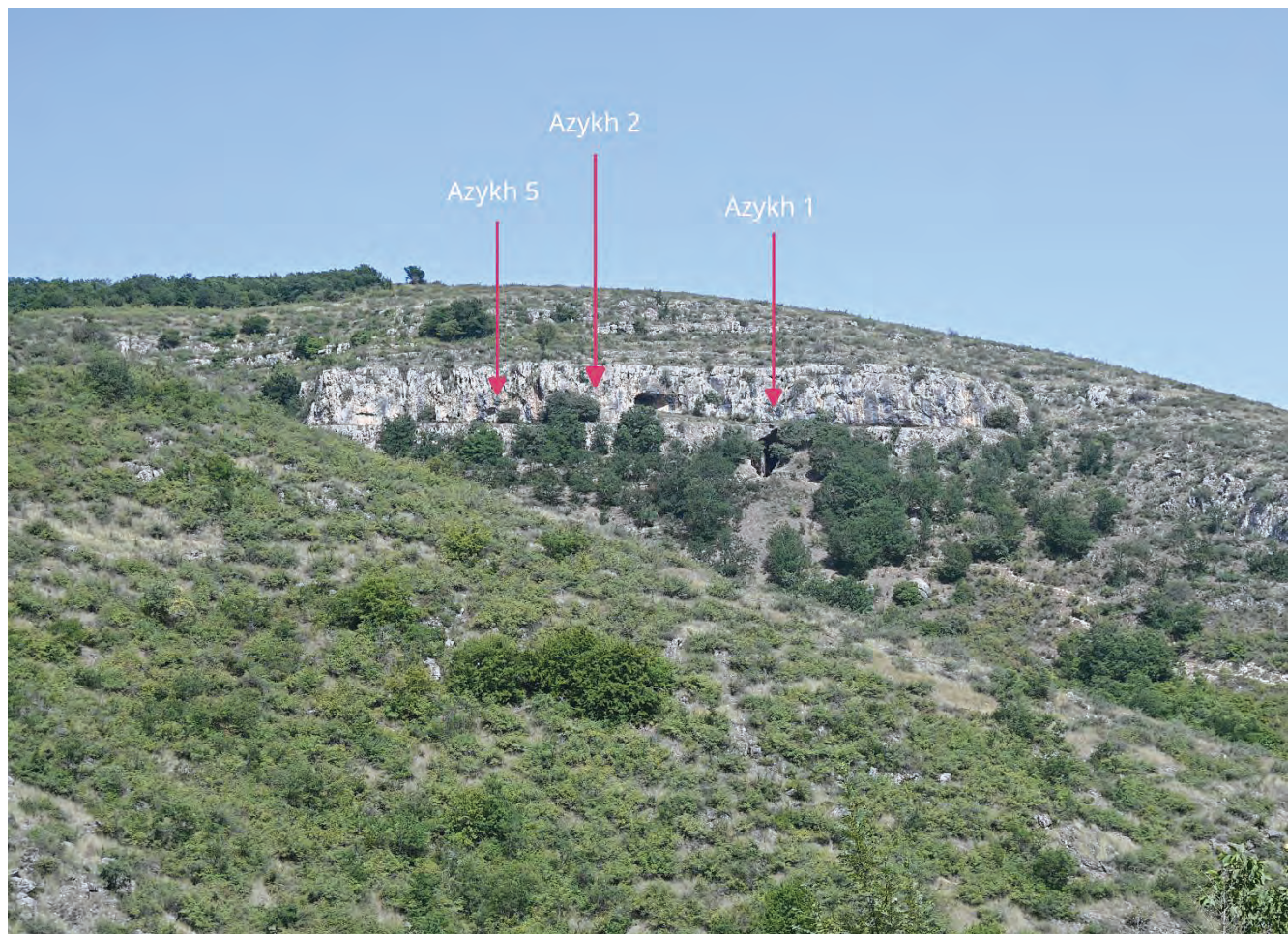


Fig. 2. Overview of the Azykh cave.

Study of Archaeological Collections and Surveys

This season is focused on two primary goals: studying archaeological material from previous excavations stored at the Institute of Archaeology and Anthropology of Azerbaijan (ANAS), and conducting archaeological surveys and visits to known sites in the regions of West Garabagh, Shusha, and Lachin.

A dedicated archaeological survey in Shusha took place in June 2024. The work focused on identifying new archaeological sites by visiting documented and reported areas that exhibit archaeological finds on the surface and key geological features, such as caves and rock shelters, as well as revisiting known archaeological sites. The survey prioritised karstic formations where locals are familiar with rock shelters and caves. A local collaborator guided the researchers to visit the Middle-Upper Jurassic limestone outcrops on the southern margin of the Dashalty River, also known as Dashalty Canyon (Fig. 3).



Fig. 3. Archaeological survey in Shusha, the Dashalty River canyon and high mountain caves.

Although several cavities were identified, their high elevation and steep exposure to erosive processes limited the preservation of *in situ* sediments. As a result, these sites hold low potential and limited relevance for the research project. Nevertheless, it was important to visit the southern area to understand the geology and landscape formation. This work is fundamental to evaluating

potential and prioritising the archaeological sites to be excavated in the second field season (August) and the following years. The next field season in this region will focus on the northern part of the Dashalty River, where the open landscape and the valley's topography are likely to preserve a significant sedimentary record (Figs. 4, 5).



Fig. 4. Survey in Shusha, one of the caves on the left bank of the Dashalty River.



Fig. 5. Visual inspection of one of the identified rock shelters. No archaeological deposits have been identified in this location.

Our investigations focus on documenting and analysing Zar, Taglar, and Azykh archaeological assemblages collected during the 1960s-80s research expeditions. Through a detailed characterisation of these archaeological assemblages, this study includes technological, typological and traceological analysis using state-of-the-art analytical methods. This work is ongoing and will be continued during the following months. Photography, drawings, and sampling complement the wear analysis study. The database structure is organised and currently

in progress, integrating data collected from all assemblages. All team members will work together during the technological and typological study, and senior researchers will provide training on state-of-the-art analytical methods (Figs. 6 & 7). This will allow us to build a diachronic and geographic framework for Azerbaijan's Late Pleistocene and Early Holocene records.

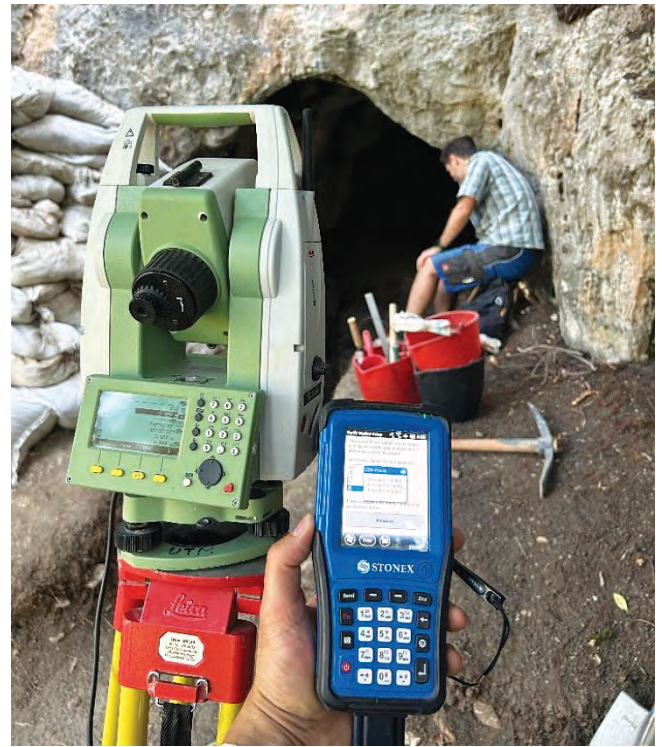


Fig. 6. Photo of the handheld GPS and total station data acquisition system. The digital software integrates grid and locus systems, providing accurate coordinates (EDMwin).

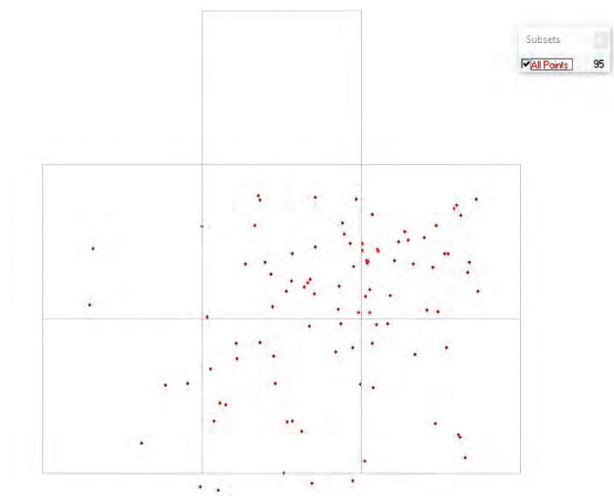


Fig. 7. Screenshot of the software NewPlot used to process and analyse all total station data.

The second step is dedicated to archaeological surveys. Here, the project focuses on visiting already documented and reported areas that exhibit archaeological finds on the surface and key geological features (such as caves and rock shelters), as well as revisiting known archaeological sites that have been excavated in the past, such as Zar and Azykh. This work is fundamental to evaluating potential and systematically prioritising the excavation of archaeological sites. Survey work combines traditional methods (such as visual inspection) with innovative digital approaches, including the use of drones and GIS analysis. LEIZA pioneered the survey, 3-dimensional artefacts, site location, and digitalisation. A dedicated GIS database for the project will be created with georeferenced cartography of the main geological features of the landscape. The research team and local students will be trained on using and applying these different techniques and methods.

Systematic Archaeological Survey and Excavation Methods

During the first phase, the field season focuses on intensive archaeological excavations at the identified archaeological sites. Here, an international and interdisciplinary research team systematically excavates archaeological sites (newly discovered and/or known). Based on the reports and to address the identified research questions that drive the project, the sites of Azykh and Zar (reported to preserve Middle Palaeolithic and Initial Palaeolithic contexts) are prioritised. However, results from the first phase might require an adjustment in the project organisation. The excavation methods follow state-of-the-art techniques, including total station surveys, 3D plotting of artefacts, and geomorphological description and characterisation of all sedimentary deposits. The excavation protocol involves recording all archaeological remains, 3D piece-plotting, and, consequently, GIS analysis and site reconstruction using dedicated software packages (e.g., QGIS). All archaeological finds are organised and labelled individually with assigned ID numbering and the corresponding x, y and z coordinates provided by the implemented total station coordinate system. In sum, this project yields impactful outcomes that significantly contribute to Palaeolithic archaeology, experimental archaeology and traceology. These outcomes encompass

groundbreaking discoveries, innovative methodologies, and valuable insights that advance our understanding of the past.

The project aims to produce an electronic mapping and GIS database of the archaeological survey, surface finds, and archaeological sites, combined with regional geological mapping. Creation of online, free-access databases, including data from analysis, experiments, images, and 3D scans of experimental and archaeological artefacts, will be generated during the project. The project will curate an extensive experimental reference collection, serving as a valuable resource for future archaeological studies. This collection will enable researchers to compare, analyse, and draw conclusions based on tangible archaeological artefacts, enhancing the depth and reliability of our interpretations.

In addition to our primary research focus, we anticipate initiating and collaborating on various archaeological projects. These endeavours explore diverse historical periods, geographical locations, and cultural contexts, broadening our perspective and enriching our research contributions. Our project works and collaborates closely with the Azerbaijan National Academy of Sciences (ANAS), the Azerbaijan Science Foundation, and the Ministry of Science and Education. Such a network aims to foster groundbreaking research and find the best way to communicate with local communities about our work and their heritage. Additionally, collaboration between countries contributes to long-term educational training programs, in which young researchers are mentored and trained in various methodologies and skills. This also includes student exchange programs between institutions with different expertise. Our work in the Garabagh region is dedicated to disseminating the cultural, historical, and archaeological heritage of the region, so that the generated knowledge can be translated into tourist routes and shared with others. We believe this promotes the development of the Garabagh region, raising internal and national interest, as well as international awareness.

The exchange of researchers and training programmes will raise and promote the involvement of international specialists, including laboratories and research centres, with innovative methods and technologies in archaeology and tourism. This approach will build a connection between the present and the

future while studying human prehistoric technological evolution. Such an effort will result in the publication of international articles, books, announcements, and compilations of interest to everyone in science and those closely related to it. In sum, an interdisciplinary approach is fundamental to our project. By integrating insights from various disciplines, including anthropology, history, geology, and chemistry (particularly with researchers from Azerbaijan), we aim to create a comprehensive understanding of the Palaeolithic period in this region.

Azykh Cave Archaeological Excavation Season in 2024

Research objectives. The 2024 research field season at the archaeological site of Azykh Cave took place from August 7 to September 5, 2024. Based on previous work at both loci, the project prioritised the archaeological intervention at Azykh 2 and Azykh 5 (Fig. 2). This aimed at inferring the existence or absence of human occupation during the Pleistocene in other areas outside Azykh 1. Although previous works at Azykh 2 and Azykh 5 did not find any Pleistocene remains in the excavated deposits, the limited excavation area, together with the identified stratigraphic and sedimentary potential at both areas, held the potential to preserve archaeological remains in both adjacent horizontal areas and deeper in the sequence. Hence, during the first days at the site, the work focused on the Azykh 2 and Azykh 5 locations. These were aimed at two main objectives: to test the presence of archaeological remains attributed to the Pleistocene and to investigate the chronostratigraphic sequence at both loci. To achieve these goals, the field season commenced with cleaning activities, given the site's poor preservation. This included clearing the access path to Azykh 2 and 5, as well as the interior of the caves, to enable access to the infilling sediments and sandbags left by previous excavations.

Such work at all caves also aimed to infer the necessary measures to preserve and conserve the various archaeological and geological deposits at Azykh Cave. After the cleaning work, the research team focused on uncovering the previous excavation areas at both Azykh 2 and 5. The team was divided into two groups, and the filling sediment and sandbags were removed in both locations. Both places were exposed and

documented.

In Azykh 2, after the 2D and 3D documentation of the exposed excavation area was completed, a new local coordinate system was installed and used throughout the entire excavation season. Assisted by a Total Station, all previously excavated squares (1 x 1 m) were labelled and tridimensionally coordinated. The archaeological work aimed to continue excavating all exposed squares to test for the eventual presence of human occupation during Pleistocene sediments.

In Azykh 5, no total station was used. Nevertheless, the exposed excavated squares (1 x 1 m) were also labelled according to a new system. Here, the investigation focused on continuing the excavation to test the extension of the stratigraphic sequence.

FIELD METHODS AND TECHNIQUES

The investigation during the August 2024 field season in Azykh Cave focused on the archaeological study of both loci, Azykh 2 and Azykh 5. The primary objective was to investigate the extent of human occupation in Pleistocene deposits and infer the depth of the stratigraphic sequences, as previous works have not reached bedrock in both locations.

In Azykh 5, after exposing the top sediments from the previous excavation, work continued in all squares (C5, C6, C7, and C8). The excavation followed standard methodologies. Each geological layer was excavated in all squares by artificial layers of 5 cm. Plastic buckets of 10 litres were filled with the excavated sediment and transported to the sieving station, which was installed on the edge of the walking path. Sediments were sieved on-site using a 2 mm mesh. All items recovered during the excavation were found in situ, and those recovered in the sieving station were collected in individual plastic ziplock bags and labelled accordingly. The information concerning the date, excavation area, and layer was placed on all labels.

In Azykh 2, the excavation followed the same principles and methods used in Azykh 5. A total station was also implemented at the loci (Fig. 6). A new data series was installed inside and outside the cave, in various locations and areas that were likely to be identified during future field seasons. A new excavation grid was established using a local coordinate system aligned with the excavation's north direction. All

squares (1 x 1 m) were labelled. The local coordinate system and excavation grid were created using the excavation method developed by Shannon McPherron and Harold Dibble (McPherron & Dibble, 1988; Dibble *et al.*, 2007). To operate the total station, a handheld GPS was used, with EDMwin software installed (Fig. 7). Shannon McPherron and Harold Dibble created this software to acquire 3d total station data, providing detailed three-dimensional data and managing the excavation database (McPherron, 2005; McPherron & Dibble, 2002).

All *in situ* finds were tridimensionally coordinated (X, Y, Z) and added to the database. In the database, each find is associated with information on the excavation square, ID, layer, code (e.g., lithic, bone, etc.), and further observations. All buckets (10 litres) with sediment were transported to the sieving station. The identified remains from the sieving were also collected and placed in individual bags labelled with the respective information. In the field lab, the site database was imported into the software NewPlot for spatial analysis and data management. All recorded finds, including topography, were exported as an Excel file.

Archaeological Work at Azykh 2

At Azykh 2, the archaeological work was focused on continuing the excavation of the sedimentary deposits exposed by the previous interventions at the site. After exposing the top of the previously excavated sediments (Layer 2), the top of all squares was measured with a total station. Once the topography was complete, excavation was initiated in squares F9, F10, H9, and H10. During previous work, square H11 reached the deepest level of the entire area. Therefore, the main goal was to get the same topographic level in all squares. Hence, sediments attributed to layer two were excavated in all squares. Layer 2 is characterised by strongly calcareous and compact sediments with angular limestone clasts and exhibits a white to yellow colouration. Due to the crude and compact character of the sediments, excavations were carried out using picks and shovels. The layer was excavated using the five artificial levels and the bucket method. All buckets were sieved, and occasionally, for control, several bags of sediments were taken to the field lab for flotation. No remains were found during the flotation (Fig. 8).



Fig. 8. Azykh 2. The new excavation site was initiated by continuing the previously opened area.

Small, fragmented faunal remains, lithic, dacite, and flint were recovered together. No small lithic debris has been identified either *in situ* or through sieving. All recovered lithics from Layer 2 were located on Squares F10 and H10, adjacent to the north profile of the excavation area. From a technological and typological perspective, lithic tools can be assigned to the Initial Upper Palaeolithic or Middle Palaeolithic period. Further study and analysis are ongoing to achieve a more accurate attribution.

A new layer was exposed on squares F9, F10, H9 and H10. Layer 3 is a calcareous brown sedimentary deposit, characterised by rounded and angular pebbles and granule-grade clasts (Fig. 9). Small bone fragments, lithics, and charcoal are present but are not abundant. This layer was exposed during the last days of the excavation, and it is not entirely uncovered in all squares. Several bones and lithics from this layer have been identified *in situ*, including some diagnostic Levallois points and sidescraper assigned to the Middle Palaeolithic period (Fig. 10, 11).

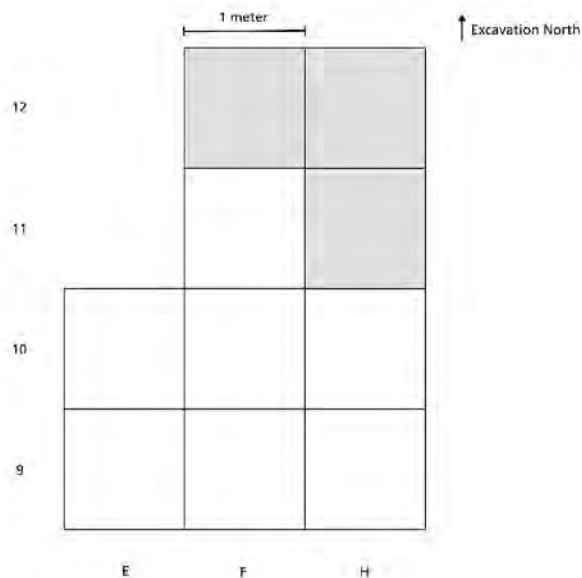


Fig. 9. Schematic excavation plan for the 2024 season, including previous and ongoing excavation units. Azykh 2. The squares/units excavated during the 2024 season are in white, and the squares/units that will be opened in future seasons are in grey.



Fig. 10. Overview picture of a lithic tool recovered during excavation at Azykh 2.



Fig. 11. The same artefact was cleaned and sampled for technological and traceological analysis.

Based on these results, future excavation works at Azykh 2 will focus on exposing Layer 3 in all open squares and extending the excavation toward the north profile, with the opening of squares F11, F12, H11, and H12 (Fig. 12). Absolute dating of the deposits, micromorphology, and other sedimentological analyses are ongoing.

Archaeological Work at Azykh 5

At Azykh 5, the interventions focused on testing the stratigraphic sequence of the deposit (Fig. 13). Therefore, the excavations were continued in all trench squares C5, C6, C7 and C8 (Fig. 14). The excavation was done following the uncovering of Layer 2, using artificial levels of 5 cm and the bucket methods. All sediments collected in the buckets were sieved at the sieving station, and some were taken home for flotation. On the south part of the trench, remains have been found. Layer 2 proved sterile, and bedrock has been reached on squares C5 and C6. On the northern part, the cleaning of the profile exposed sediments corresponding to Holocene deposits. All soil residues were sieved. As a result, many artefacts from various periods have been discovered. Thus, several remains have been found, including faunal remains, ceramics, and human teeth in these deposits. Middle Palaeolithic stone tools have a special place among the findings from the excavated soil (Fig. 15). From a technological and typological perspective, the ceramic fragments are likely to correspond to the Iron Age chronologically. The excavation site is archived with 3D modelling and high-resolution photography.

During the last week of the season, the work focused on preparing access to the inside gallery, where an *in situ* sediment sequence had been identified and exposed during previous works (Figs. 16, 17). The cleaning work also revealed a Holocene top layer, marked by loose, dark sediment, from which several ceramic fragments and bones had been recovered. Additionally, a flint blade was found in the *in situ* sediment sequence during the cleaning process.

CONCLUSION AND FURTHER WORK

Located at the geographical crossroads of Africa and Eurasia, the Caucasus serves as both a corridor and an ecological refuge, distinguished by its rich biodiversity of flora and fauna, which has made it an appealing site for sustained human habitation throughout history. This article introduces a research project that addresses key questions during a crucial phase of our evolutionary development, spanning Marine Isotope Stage (MIS) 7 to 2 (approximately 250,000 to 14,000 years ago). We present and discuss the research project, outlining its questions and objectives, and report on the findings from an initial archaeological campaign conducted at the Azykh site.

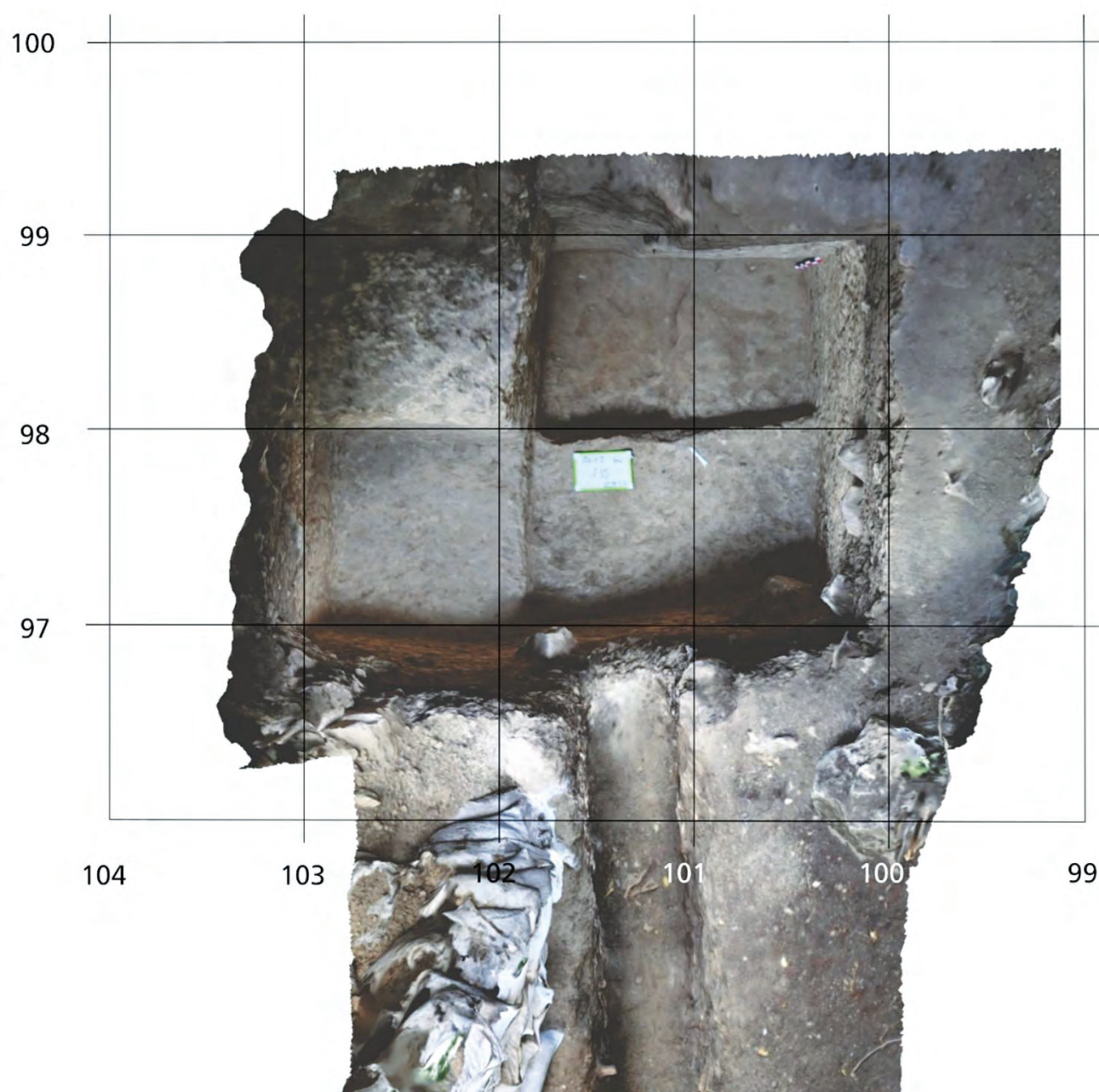


Fig. 12. Areal image generated from the photogrammetry 3D model of the top of the sediment at the end of the excavation season at Azykh 2.



Fig. 13. Exposure of the sedimentary deposits at Azykh 5.



Fig. 15. Overview picture of a lithic tool recovered during excavation at Azykh 5.

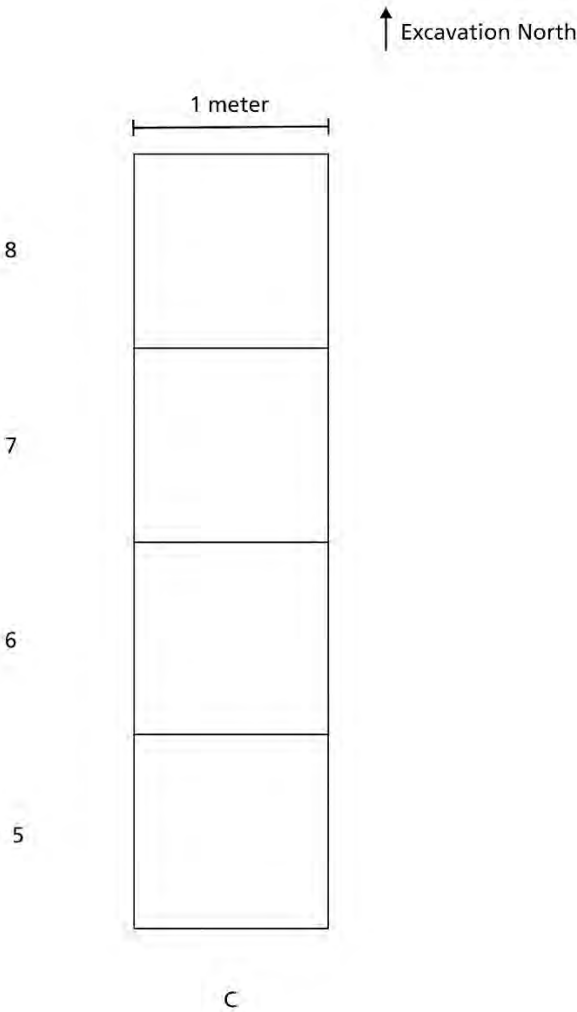


Fig. 14. Schematic excavation plan for the 2024 season, including previous and ongoing excavation units. Azykh 5.



Fig. 16. Profile of the excavation area at the end of the excavation season, showing the identified and excavated sedimentary deposits in Azykh 5.



Fig. 17. Lithic artefact discovered from a section of a cave deposit remnant at Azykh 5.

Our archaeological works at Azykh Cave focused on excavating two loci, Azykh 2 and Azykh 5. These loci were selected based on previous work that attested to the preservation of *in situ* sediments. Our work aimed to test for the presence of evidence of human occupation at these loci, assigned to the Late Pleistocene and Early Holocene, to reconstruct the extent of human occupation at the cave, and potentially to identify periods of human occupation not represented in the sedimentary record of Azykh 1. Our successful work resulted in identifying archaeological material that, based on the technology and typology, can be assigned to early Holocene occupations (e.g., Neolithic and Bronze Age) in Azykh 5. In Azykh 2, the continuation of the excavation led to the recovery of several lithic artefacts, likely dating to the Initial Upper Palaeolithic and Middle Palaeolithic periods.

However, further work on the lithic assemblage of the archaeological deposits and absolute dating is ongoing.

Considering the results of the August 2024 season, future works should focus on continuing the excavation of Azykh 2. Here, the work will be carried out by extending the existing excavation area and continuing the investigation into the extent of the sedimentary sequence. On Azykh 5, since bedrock has been reached on the passage trench, the work will focus on excavating the *in situ* sediment sequence exposed inside the gallery. Additionally, the research project focuses on the

material analysis from the old excavations and systematic archaeological and raw material surveys in the region. Currently, use-wear analyses of selected stone tools from Taglar and Zar, alongside lithic materials from Azykh originating from various Palaeolithic sites in Garabagh, are being conducted at the Tracer Laboratory (Leibniz Zentrum für Archäologie, Germany). Simultaneously, techno-typological analyses are being conducted at the Azykh Archaeological Research and Analysis Laboratory (Garabagh University, Azerbaijan).

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are carried out at the MONREPOS, TraCER laboratory, thanks to the 13th mobility grant by the Azerbaijan Science Foundation. Project name: "Traceological microscopic analysis in the new period research in the Azykh cave" (09.11-08.12.2024) (Grant number: AEF-Mob-13-2024-

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PRELIMINARY RESULTS OF THE STUDY OF TWO LATE CHALCOLITHIC SETTLEMENTS IN THE GARABAGH STEPPE

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Abstract

During June-August 2022 and October-November 2024, the first and second field campaigns of the Lower Garabagh Research and Excavations Project were conducted. The work was carried out on three Late Chalcolithic settlements (dating to the first half of the 4th millennium BCE): Leylatepe, Janavartepe, and Sarijali 2. The work at Sarijali 2 confirmed that the site had been destroyed. Work at Leylatepe and Janavartepe revealed a complex stratigraphy and rich material culture assemblages, demonstrating the significant differences between the two nearby settlements. This article summarises the initial results of our work since the summer of 2022.

Keywords: *Late chalcolithic period, Leylatepe cultural phenomenon, Bronze Age; Kura-Araxes culture, Bedeni culture, Leylatepe, Janavartepe, Cretulae*

This article is dedicated to the memory of Tufan Akhundov, a scholar, a great man and a friend.

INTRODUCTION

The Late Chalcolithic Leylatepe phenomenon (first half of the 4th millennium BCE) of the Southern Caucasus has intrigued archaeologists for several decades (Narimanov *et al.*, 2007; Sagona, 2017). However, the phenomenon associated with the Near Eastern and North Caucasian cultures is not adequately defined chronologically and in terms of material culture. Our project was launched to systematically study the material culture of late prehistoric societies of the Garabagh Steppe.

During June-August 2022 and October-

November 2024, the first and second field campaigns of the Lower Garabagh Research and Excavations Project (LKREP) were conducted. The 2022 season, undertaken on behalf of the German Archaeological Institute and the Institute of Archaeology and Anthropology of Azerbaijan and supported by the German Research Foundation, was directed by M. Iserlis and Kh. Almamedov, with the assistance of M. Aghalarov, A. Qasimov, E. Babazade, G. Maurer, N. Mammedli, K. Hruby, and S. Hasanov (area supervision, environmental team, finds processing and administration). Students

from Azerbaijan and paid labourers from the village of Khindiristan (*Xındırstan*) and the Jalilabad District participated in the excavation. G. Iskandrova and M. Mamedova hosted the expedition.

S. Hasanov and S. Aliyev (administration), M. Aghalarov, A. Qasimov, K. Hruby (area supervision), J. Krumnow (survey), and K. Radezky (restoration) assisted in the 2024 season. Paid workers from the Jalilabad District and Khindiristan participated in the field and post-excavation work. S. Gulmalieva hosted the expedition.

This report presents the preliminary results of our fieldwork and special studies conducted between June 2022 and February 2025.

RESULTS

Fieldwork, Summer 2022 and Autumn 2024

Three mounds located close to each other were selected as potential excavation sites (Fig. 1). Janavartepe (*Canavartəpə*) is a mound with a

diameter of ca. 100 m and a height of up to 2.5 m, located on a terrace south of the dry river Shirkhangobusu (40°07'35.5" N, 047°09'56.0" E). Sarijali 2 (*Sarıcalı*) is a 1 m high hill in the middle of a plain, 1.6 km northeast of the village of Sarijali (Almammadov, 2016; 40° 09'13.5" N 47° 12'19.3" E). Leylatepe is a mound (2 m high and 50-60 m in diameter) located at the northern edge of the village of Eivazly (*Eyvazlı*), Aghdam region (Narimanov *et al.*, 2007; 40° 08'19.9" N, 47° 08'19.7" E), 2.6 km northwest of Janavartepe and 5 km southwest of Sarijali 2 (Almammadov & Iserlis, 2022).

The 2022 season lasted three months (June-August), during which we worked on three Late Chalcolithic sites. The 2024 season, which lasted almost two months (October-November), was focused on Janavartepe. The results of two field seasons, summer 2022 and autumn 2024, as well as our initial observations on specific aspects of material culture, will be briefly described below.

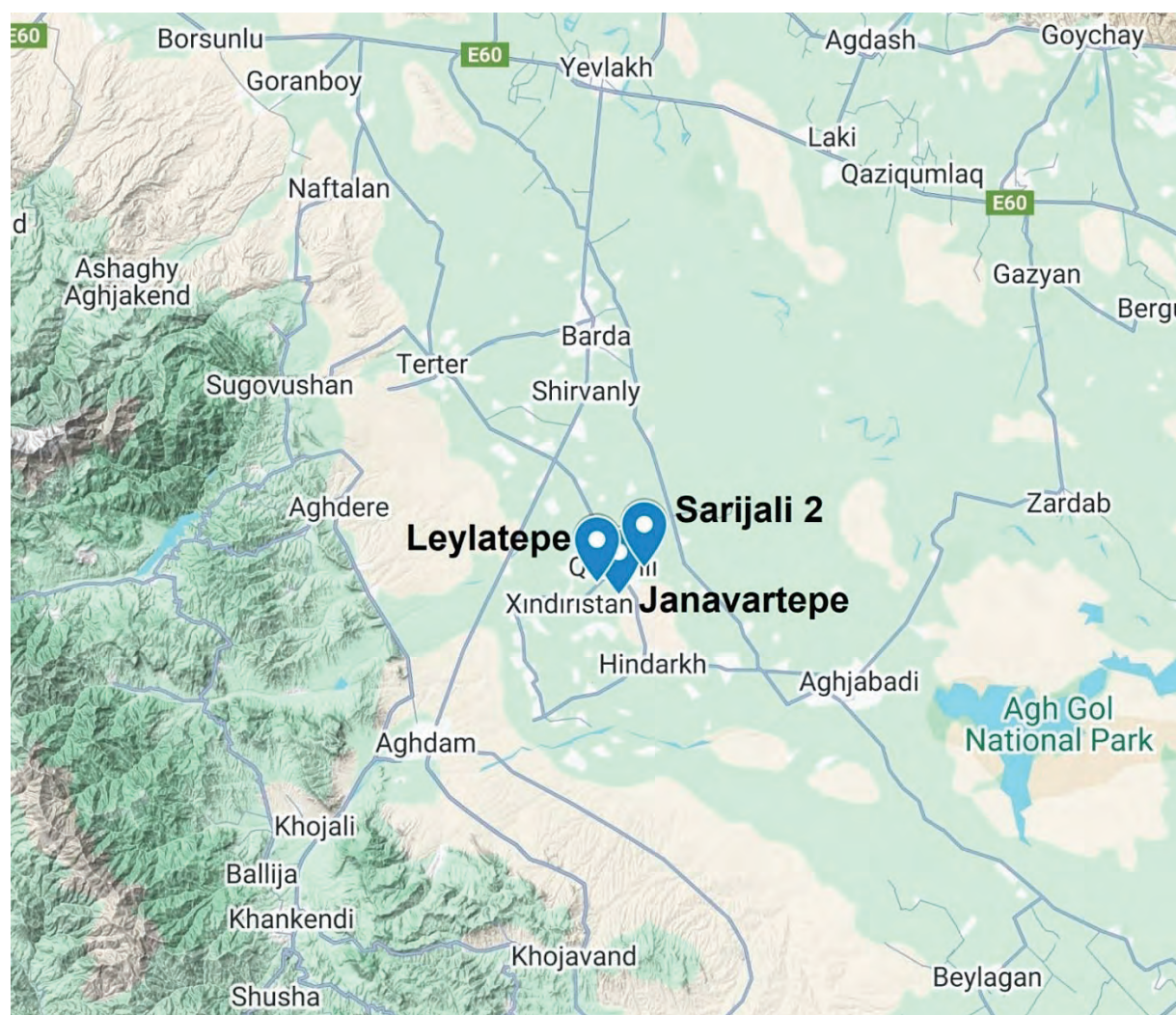


Fig. 1. Map (Google Maps). Location of Leylatepe, Janavartepe and Sarijali 2.

We started our 2022 field season in June at Janavartepe and Sarijali 2. The purpose of the soundings at Sarijali 2 was to assess the potential for possible work before the remains of the mound were completely ploughed up (Fig. 2). Our work revealed a rich pottery assemblage, stone tools, botanical remains, and animal bones without archaeological context. We, therefore, completed the work at Sarijali 2 and refilled the excavation trenches. At the end of the first week of July, we were able to start work at Leylatepe.

Leylatepe was excavated between 1984 and 1990 by Ideal Narimanov (Fig. 2; Akhundov, 2007; Narimanov, 1985; Narimanov *et al.*, 2007). Four “architectural horizons” with depths ranging from 1.55 to 1.65 m were defined in a trench measuring 324 m², excavated in the southeastern part of the site (Narimanov *et al.*, 2007). In the 1990s, the soil from the excavation trench was used as construction material and filled with garbage. Later, an orchard was planted, and a restaurant with pavilions was built on the hill, making it challenging to identify the location of the Narimanov excavations. The results of the excavations at Leylatepe were partially published, and its dating is based on a single sample derived from an unclear context (Korenevskii, 2011, p. 33; Abu Jayeeb *et al.*, 2023).



Fig. 2. Sarijali 2, aerial photo. Looking to the east.

The basic aim of our fieldwork in 2022 was to identify the remains excavated at Leylatepe in the 1980s. The 2022 excavation season at Leylatepe was conducted in five trenches: the western (IN-A), west-central (IN-L), northern (A1 and A2), and east-central (TA) parts of the mound. Two trenches (IN-A and IN-L) were opened in the western part of the mound to determine the outline of the Narimanov excavation and identify the architectural remains explored in the 1980s. We opened our trenches in this part of the site based on the information from Tufan Akhundov and our visual observations. The

recovery and identification of the remains excavated by Narimanov made it possible to establish a stratigraphic link between the old and the renewed excavations.

Six strata were defined in Areas IN-A and IN-L: modern Strata 1 and 2 and Late Chalcolithic Strata 3-6. Our Strata 3 and 4 correspond to Narimanov's Horizons 3 and 4. The four Late Chalcolithic strata consist of frequently changing settlement layers with rectangular mudbrick structures of different orientations, pits, and hearths (Fig. 3). In Stratum 5 in Area IN-L, a two-chamber pottery kiln (1.8 m in diameter) was revealed (Fig. 4). The internal layout and function of the rooms had changed entirely in Stratum 4. However, the general orientation of the walls has been preserved (Fig. 3). Stratum 3 includes two phases and comprises rectangular structures, shallow hearths (0.04-0.16 m deep and 0.35-0.65 m in diameter), three postholes (0.3 m deep, 0.1-0.2 m wide) and a storage pit. Strata 2 and 1 mark the modern waste disposal in the Narimanov trench (Stratum 2) and the construction activities related to the restaurant with a garden.

In Area TA, located east of IN-A and IN-L, we expected to find undisturbed contexts of uppermost settlement phases corresponding to Narimanov architectural horizons 1-3. The stratigraphy in Area TA includes three local layers: topsoil, Stratum 1, and Late Chalcolithic Strata 2 and 3. The Late Chalcolithic strata in Area TA comprise of open areas with corners of two rectangular mudbrick houses, pits, and pottery concentrations (Fig. 5). In their brief description of the stratigraphy of the site, Narimanov *et al.* (2007: 9) mentioned that horizon one was almost destroyed by plowing to a depth of 0.4-0.5 m. In Area TA, below a topsoil layer of 0.10-0.15 m, a restorable storage jar was discovered in situ, indicating the presence of the uppermost Late Chalcolithic layer.

Two 5 x 5 m squares (Area A) were opened to explore the settlement's northern edge. We expected to find undisturbed contexts of the upper settlement phases in this area, which correspond to Narimanov's “architectural horizons” 1-3. The local Stratum 3 consists of a series of dark ashy layers with concentrations of pottery sherds, pit-like features, postholes, grinding stones, and accumulations of animal bones. In the southwestern part of Area A, remains of a wall were documented. Twenty-one per cent of the cooking vessels and less than 5% of the non-cooking vessels found in secure contexts at Leylatepe in 2022 originated from Stratum 3 in Area A.



Fig. 3. Leylatepe, Area IN-A, looking to the southwest. Stratum 6 (pottery sherds and burnt material, upper left); Strata 4 and 3 (walls in the centre, on top of earlier wall, pit and rounded installation). Note the density of the layers (centre), 20th-century mixed garbage in the southern part of the section (upper left) and 20th-century backfill in the section (upper centre and right).



Fig. 4. Leylatepe, Area IN-L, looking to the south. Pottery kiln. Note the 20th-century mixed backfill in the section.



Fig. 5. Leylatepe, Area TA, looking to the southwest.

Our work in Leylatepe yielded the most remarkable results, including the clarification of the settlement's stratigraphy and the investigation of rectangular mudbrick houses and a two-chamber pottery kiln.

Three excavation areas were opened at Janavartepe: Area A at the southeastern edge and Areas B and C in the northwestern part of the mound (Fig. 6). The southeastern part of the mound was heavily damaged by bulldozers to a depth of 2.3 m. In this part of the mound, Area A, our goal was to document the layers and understand the stratigraphy. A 15 m long section face was first cleared, and a trench was excavated back from the face of the section. The sounding revealed a dense stratigraphic sequence, including Strata 4-2 from the Late Chalcolithic period and Stratum 1, dated to the Late Bronze Age-Early Iron Age period. Two rounded dugouts were constructed in Stratum 4, and the area was carefully plastered. Dugout 3217 includes three parts: a large room (diameter of 3.45 m), a smaller room (diameter of 2.8 m) to the east of it, and a bell pit (1.2-1.7 m) to the north-east (Fig. 7). Piles of mudbricks, mixed with clay installation fragments, animal bones, bone tools, groundstone, and pottery fragments were found on the floors of the rooms. Fragments of *cretulae*, stamped clay lumps used to seal containers and doors (Figs. 10, 8; Frangipane *et al.*, 2007), were found in this destruction debris, together with deer antlers. Structure 3237, located north of Structure 3217, comprises two rooms (with diameters of 2.5 m and 1.7 m). This dugout contained pottery sherds, stone artefacts, animal bones, and several *cretulae* fragments. Stratum 3 structure 3217 was sealed with a clay layer, and rounded structure 3026 was built on top of it. The area was abandoned for some time, leaving behind a layer of washed mudbrick material mixed with organics. Later in the Late Chalcolithic period, an infant burial was inserted into this layer. More than two thousand years later, two Late Bronze Age-Early Iron Age burials were made in Area A, which cut through the Late Chalcolithic remains.



Fig. 6. Aerial view. Areas C and B are located in the northwestern part of the mound (upper left), while Area A is in the southeastern part (bottom right).



Fig. 7. Janavartepi 2024, Area A, aerial view. Large dugout 3217 (centre) with collapsed mudbricks and destruction layer in two rooms, smaller dugout 3237 to the north (upper part of the photo), and two pits (bottom).



Fig. 8. Janavartepe 2022, Area C, looking to the west. Oval dugout in the north (right) with a rounded clay installation and a rounded dugout in the south (left). Note the uppermost floor surface (east) and one of the lower floors (west) in the oval structure.



Fig. 9. Janavartepe 2024, Area B. Late Chalcolithic infant burial in cooking pot, covered with large sherds (front). Note the animal burrow channel that destroyed another burial to the east.

In Areas B and C, located northwest of area A, seven strata were defined: Late Chalcolithic Strata 7-5, Early Bronze Age Stratum 4, Middle Bronze Age Stratum 3, Late Bronze Age Stratum 2 and Stratum 1, comprising traces of activities from the late Medieval period to the 20th century (Figs. 8, 9). Stratum 7 (Fig. 8) includes two dugout structures, a rounded clay installation, and remains of a mud plaster floor. The oval dugout in the north included an antechamber with an infant burial in the cooking pot. The structure was furnished with fireplaces and a pillar base in the central part. Rounded clay installation was built at the exterior of the wall in its south-western part (Fig. 8). We were able to describe three main use phases in the structure, defined by floor surfaces with fireplaces (Fig. 8). In contrast to the rounded dugouts at Janavartepe, a minimal quantity of pottery sherds and animal bones was found in this structure. An additional deep dugout of two rooms was found south of the oval structure. The dugout's large room (2 m in

diameter) has two distinct use phases, characterised by a rich assemblage of pottery, stone artefacts, and animal bones. In the western part of Area B, a small elongated structure was uncovered, with a rounded wall and an open area to the south and east. The structure builders excavated a shallow, irregularly shaped depression of 0.08 m and built a mudbrick wall along the outline of the pit. The area was abandoned for a period (Stratum 6) and later utilised for Late Chalcolithic infant burials (Stratum 5; Fig. 9), which were cut into Strata 7 and 6.

In Areas B and C, three Kura-Araxes (Stratum 4) and three Bedeni burials (Stratum 3) were documented (Fig. 9). An Additional burial, dated to the Late Bronze period, was excavated in the eastern part of Area B.

The Late Chalcolithic Pottery Assemblages

The pottery assemblages of the three sites include bowls, deep bowls with sinuous walls, small globular jars, jars, vats/basins, *pithoi*, cooking pots, and very rare skillets. Several twin jar fragments were found at Leylatepe and Janavartepe. Bowls constitute more than 40% of the Leylatepe non-cooking assemblage. At Janavartepe, bowls constitute about 25% of the non-cooking vessels.

The Leylatepe assemblage was divided by Narimanov *et al.* (Narimanov *et al.*, 2007, pp. 37-39) into three main paste (Russian: *формовочная масса*) groups: (1) fine clay without temper or minimal content of fine sand; (2) fine clay with added fine-chopped vegetal material; and (3) clay with added grus/grit and coarse sand. Rarely were both sand and vegetal temper added.

From the typological and functional standpoints, the ceramic assemblages of the three settlements consist of two main components, typological functional groups: (a) Homogeneous non-cooking pottery and (b) Heterogeneous kitchen pottery with sooted surfaces. The so-called "Sioni" combed vessels (group (c) (Sagona, 2017) constitute 1-7% of the assemblages. Additional components of the assemblages, both at Leylatepe and Janavartepe, are very rare black and/or brown burnished closed vessels. The fragmentary preservation of these pots does not allow us to describe their complete profile; however, during two seasons of excavation, we did not find any open vessels.

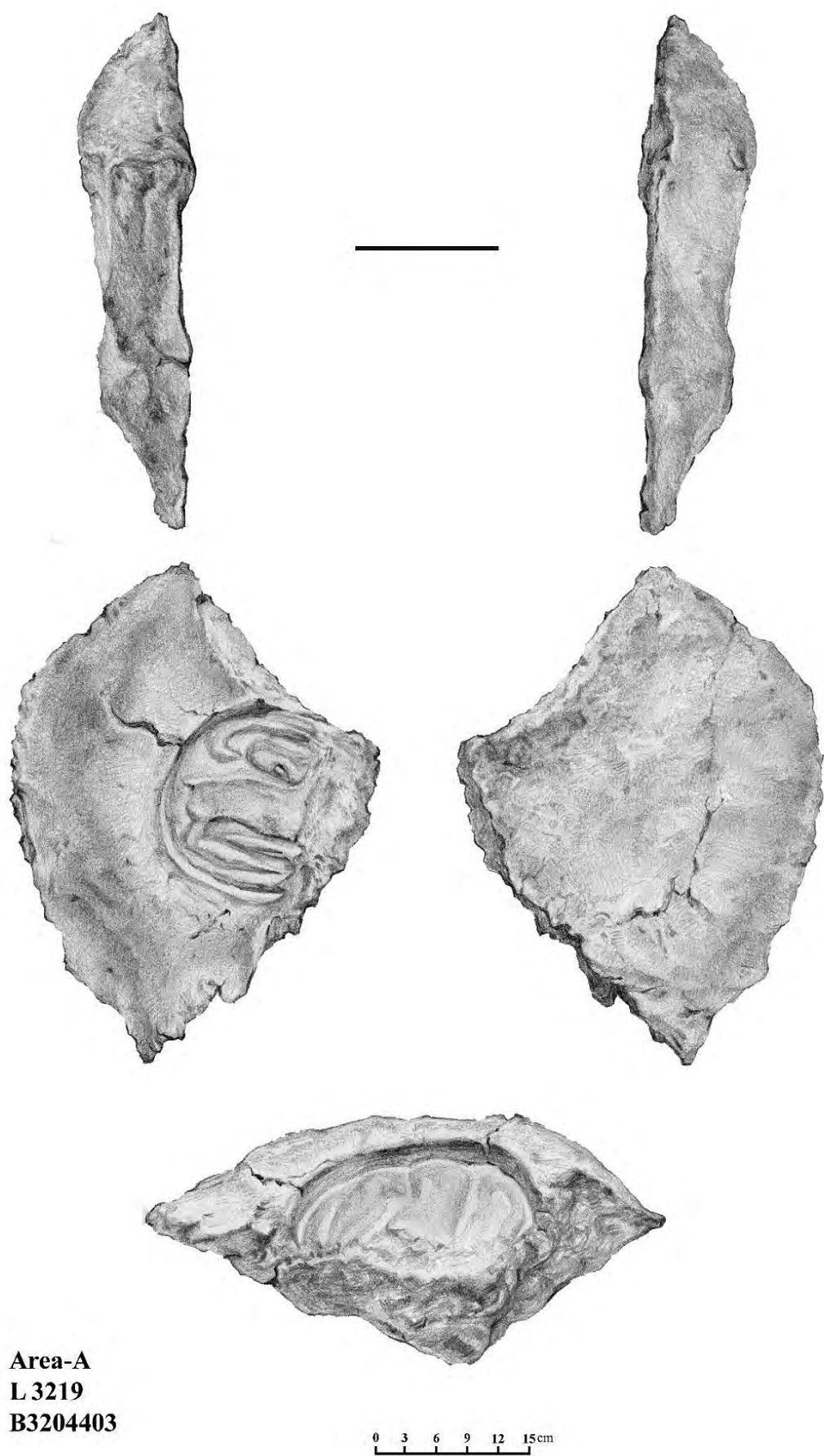


Fig. 10. Cretula.

Based on first-hand observations, four main wares were defined at Leylatepe and Janavartepe:

Ware 1. Fine whitish-pink, beige, and rarely pale brown clay without vegetal temper, without or with very rare visible grit temper; slipped, nicely smoothed, mostly polished, and rarely slightly burnished; sections without cores. Shallow grooves parallel to the neck and base are marked on the inner and/or outer surfaces of 70% of the items. Bowls and jars of the typological-functional group (a) belong to this ware. Less than 10% of the registered indicative sherds belong to this group. The group is identical to group (1) defined by Narimanov *et al.* (2007);

Ware 11 (group (2) of Narimanov *et al.*, 2007) is almost identical to *Ware 1* regarding clay but contains vegetal material and some large mineral grains. Seventy per cent of diagnostic sherds and vessels belong to this ware. The clay is delicate, ranging from whitish-pink to greenish-white, beige, and rarely pale brown or reddish-brown. The vessels are slipped, well-smoothed or polished, and sometimes burnished. Shallow grooves parallel to the neck are marked on the inner and/or outer surfaces of 40% of the sherds that belong to the ware. These were produced in a full range of non-cooking vessels of typological-functional group (a): bowls, globular pots, jars, basins/vats, and *pithoi*. Most jars, *pithoi*, and vats/basins sections exhibit dark grey to black cores.

Some of the vats were intensively burnished on the exterior, and others were also burnished on the interior and fired to a red colour. This small group

of vessels ($n = 10$, 3% of total sherds) is defined as *Ware 11a*;

Ware 2. Coarse dark grey to dark brown, sometimes red clay with coarse sand, and with or without vegetal material temper; the vessels are mainly slipped and well smoothed or polished. The ware includes necked cooking pots and rare skillets of the typological-functional group (b);

Ware 3. Coarse grey to brown clay with grit temper; slipped, smoothed, or slightly polished. The exterior surfaces and upper interior are combed (typological-functional group (c). Only so-called “Sioni” jars belong to this ware.

Typological-functional group (a) is associated with *Wares 1* and *11* and characterised by standardised clay type, temper, simplified morphology, and wheel-finishing marks. Typological-functional groups (b) and (c) are associated with *Wares 2* and *3*, respectively.

Seventy-seven diagnostic vessels from Leylatepe were petrographically analysed (Iserlis, 2019). Four fabric groups (A, AA, B, and C) were identified based on the relative quantities of minerals and evidence for the intentional manipulation and treatment of the raw material.

The key clay groups are indicated by uppercase letters, to which numerals indicating different types of inclusions may be added (2 – vegetal material, 3 – grog, 6 – added limestone sand, 17 – granite/granitoid sand). Table 1 and Fig. 12 summarise the main results of the petrographic analysis.

Table 1. Leylatepe. Distribution of sampled vessels according to Fabrics

Fabric/Type	A17	A2-17	A3-17	AA6-17	B	B2	B2-17	B2-6-17	B2-3	Bb2	BB	C	C2	Cc2	Total
Bowl						6	1	1	1	24		2		1	36
Beaker										1					1
Basin/Vat										3				1	4
Jar					1	1		1		12	1		1		17
Pithos										4			1		5
Combed “Sioni” Jar				5											5
Brown-Black Burnished Jar		1													1
Total	0	1	0	5	1	7	1	2	1	44	1	2	2	2	69
Cooking pot	2	5	1												8
Total	2	6	1	5	1	7	1	2	1	44	1	2	2	2	77



Fig. 11. Cooking pot.

The morphological, petrographic, and technological analysis of the pottery shows a clear segregation in raw materials, construction techniques, and surface treatment methods between different typological-functional groups and wares (Iserlis, forthcoming):

1) The producers of non-cooking vessels (*Wares 1 and 11*) used only clays of groups B and C (Table 1). The producers of these vessels added mainly vegetal temper (87%, $n = 55$, of the sampled non-cooking vessels); vegetal temper, limestone, and granitoid sand; vegetal and granitoid sand, and very rarely, vegetal material and grog. Only 6% ($n = 4$) of the sampled vessels in the group were produced using clay without added temper.

2) All cooking pots (*Ware 2*) were made from local soil A (Fig. 11). Temper was constantly added to the clay: vegetal material and granitoid sand (5 of 8); granitoid sand (2 vessels) or grog and granitoid sand (1 item).

3) Producers of combed "Sioni" jars (*Ware 3*)

used only one Fabric (AA6-17) that was not used by potters of typological-functional groups (a) and (b). The calcareous clay and mixed limestone-granitoid temper strongly distinguish the choices of Sioni potters from the non-cooking and cooking vessel producers (Table 1 and Fig. 12).

The Ground Stone Tools. The two seasons of excavations at Janavartepe and one at Leylatepe yielded 370 ground stone tools and tool fragments. Of these, approximately one-third of the artefacts were found in topsoil and disturbed contexts ($n = 81$) or within mixed Bronze Age–Middle Age strata that sealed the Late Chalcolithic remains at Janavartepe ($n = 41$). However, most of the tools ($n = 248$) were retrieved from the Late Chalcolithic layers of both settlements.

The Late Chalcolithic ground stone tool assemblage comprises mostly tools and fragments found at Janavartepe ($n = 188$, 75.8%), which has been more extensively excavated to date, and the remaining 60 artefacts (24.2%) were found at Leylatepe. The tools were made of primarily volcanic materials ($n=150$, 60.5%). The use of sedimentary rocks is significantly less frequent ($n = 71$, 28.6%), with limestone (19.0%) being the most common among these. Metamorphic raw materials ($n = 8$, 3.2%) are sporadically present in the assemblage, and in six cases, the origin of these raw materials remains unclear. The preference for volcanic rocks and basalt, mainly, is even more pronounced at Leylatepe (71.7%), while the variety of raw materials at Janavartepe is slightly higher.

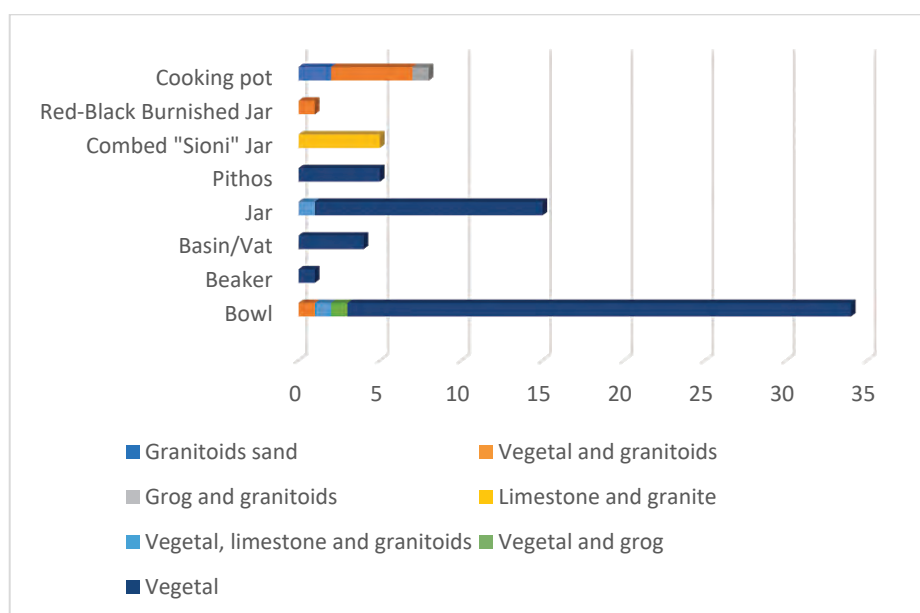


Fig. 12. Leylatepe. Distribution of sampled vessels according to temper types.

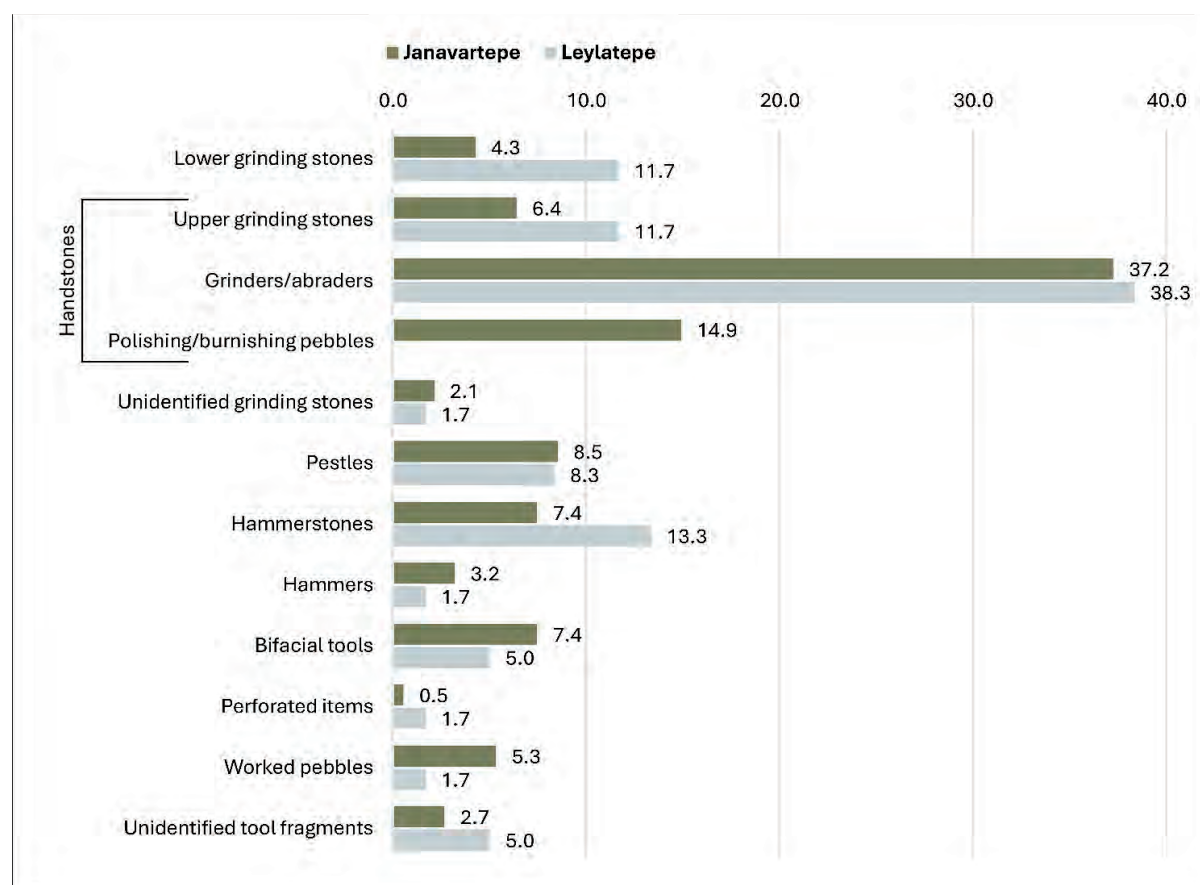


Fig. 13. Frequencies of ground stone tool types at Janavartepe and Leylatepe.



Fig. 14. Two large upper grinding stones found *in situ* in the central dugout in Area A, Janavartepe.

The tools were grouped into technomorphological categories (Fig. 13), including lower grinding stones (passive grinding implements, $n=15$, 6.0%) handstones (active grinding, abrading, or polishing/burnishing tools, $n = 140$, 56.5%), pestles ($n = 21$, 8.5%), hammerstones and elongated hammers ($n = 29$, 11.7%), bifacial tools (axes, adzes, chisels and bifacial discs, $N=17$, 6.9%), perforated items ($n=2$, 0.8%), worked pebbles ($n = 11$, 4.4%), and unidentified grinding stones fragments ($n=5$, 2.0%) and other unidentified tool fragments ($n=8$, 3.2%). Both at Janavartepe and Leylatepe, the

assemblage exhibits a prevalence of grinding, abrading/polishing, and percussion tools (91.6%; Fig. 14), while perforated items appear incidentally (single limestone perforated weights at each site), and stone vessels are absent from the Late Chalcolithic strata.

Zooarchaeology, Janavartepe 2022

The initial zooarchaeological analysis at Janavartepe focused on taphonomy, species and elemental identification, fusion data, dental wear, and measurements. Additionally, two teeth were analysed for sequential stable oxygen and carbon isotopes.

The Late Chalcolithic zooarchaeological assemblage from Janavartepe is dominated by domestic taxa, amongst which caprines are the most frequent, followed by cattle. Pigs are present in small quantities. Sheep significantly dominate over goats at Janavartepe. Wild ungulates account for a small amount of the identifiable assemblage, consisting of gazelle and deer (2.6%). Overall, Janavartepe exhibits a mixed herd composition, with a focus on livestock and a small number of equids. Hunting played a minor role at the site.

Table 2. Janavartepe 2022, taxonomic abundance

Taxa	NISP*	NISP %
Domesticated Ungulates		
<i>Bos</i>	33	22
<i>Sus</i>	9	6
<i>Ovis/ Capra</i>	58	39
<i>Ovis</i>	38	26
<i>Capra</i>	11	7
Domestic sub-total	149	100
Wild Ungulates		
<i>Gazella</i>	2	1.3
<i>Capreolus capreolus</i>	1	0.6
<i>Cervidae</i>	1	0.6
Wild ungulate sub-total	4	2.6
Canines		
<i>Canis</i>	1	0.6
Total identifiable	154	100
Body size category		
Large bovid/cervid	3	
Medium bovid/cervid	73	
Small bovid/cervid	9	
Large bovid	2	
Medium bovid	1	
Large mammal	31	
Medium mammal	10	
Small mammal	2	
Body size sub-total	131	
Total	285	100

Archaeobotany, Janavartepe 2022

During the 2022 excavation season, 52 environmental samples, totalling approximately 1,470 litres of sediment, were recovered from Janavartepe. G. Maurer and N. Memmedli processed all the samples on-site.

Of the entire assemblage, 14 samples (approximately 26%) were sterile. The remaining 38 samples produced 1,067 seeds, seed fragments, post-processing waste (chaff), and food remains. Of these, 840 specimens (around 78%) were categorised as indeterminate—fragmented cereals and arable weeds lacking identifiable features. Overall, the assemblage is predominantly composed of cereals, followed by arable weeds, with a small quantity of other edible plants and food remains.

The dominant crop in the assemblage is barley

(*Hordeum vulgare* L.), including naked barley (*Hordeum vulgare* L., var. *nudum*) and indeterminate barley (*Hordeum vulgare* L., sensu lato), followed by various varieties of wheat. The wheat category is primarily represented by free-threshing wheat (FTW) (*Triticum aestivum/durum*), with smaller quantities of Timopheev's wheat (*Triticum timopheevi* Zhuk) and indeterminate wheat (*Triticum* spp., L.). Aside from two glume wheat fragments and two spikelet fragments, no chaff was found in the analysed contexts.

Table 3. Presenting the summary of food crops, including the glume fragments*

Presence	Sum
<i>Cereal</i>	
Naked barley	41
Barley indeterminate	39
Free-threshing wheat	40
Timopheevi's wheat	6
Cerea fragments indeterminate*	803
Total cereal	923
<i>Other edible plants</i>	
Melon	2
Egyptian cucumber/sponge gourd	1
Cucurbits fragments indeterminate	3
Total other edible plants	6
Total food crops	929

Among the wild weed species, likely arable weeds, the most common are small grass fragments (*Poaceae* L.); a few grains of *Chenopodium* L. and *Gallium* L., both native to the region. The high number of unspecified and fragmentary seeds is likely due to poor preservation, potentially caused by fire (evidenced by heavily burnt seeds) and other post-depositional processes.

Of particular interest is the absence of legume species, which have been found in other known assemblages from Late Chalcolithic or transitional (LC to EBA) sites in the Caucasus, such as Areni-1, Godedzor, and Ovchular Tepesi (Hovsepyan *et al.*, 2015). This absence could be due to a lack of inter-crop storage practices, crop storage seasonality, or an early stage of the later observed trend of complete renunciation of legume cultivation. The lack of pulses in the archaeobotanical record was observed in the Early Bronze Age assemblage,

* Note: NISP — Number of Identified Specimens (refers to the total count of all bones or bone fragments).

which was preceded by the gradual decline of pulse cultivation throughout the Chalcolithic period (Hovsepyan *et al.*, 2015).

Noteworthy are the findings from the Cucurbitaceae family: two melon seeds (*Cucumis melo* L.), one Egyptian cucumber/sponge gourd seed (*Luffa cylindrica* L.), and three fragments of indeterminate cucurbits. Melons may have originated during the Bronze Age in the Indus Valley or even earlier in predynastic Egypt (Fahmy *et al.*, 2011; Wengrow *et al.*, 2016). The origin of the Egyptian cucumber/sponge gourd is still under investigation, though it is likely a cultivar from the tropical regions of Southeast Asia or North Africa.

Fragments of food remains have been found within the assemblage, and they are currently being analysed to determine their food category.

Radiocarbon Dating

Thirty samples from different strata of the two studied sites, 12 from Leylatepe and 18 from Janavartepe, were selected for radiocarbon dating. The initial results of data modelling for Leylatepe indicate that the Late Chalcolithic sequence began around 4000 cal BCE, representing one of the earliest currently known occurrences of Leylatepe communities (Fig. 15a). The settlement appears to have ended after 3800 cal BCE.

The settlement at Janavartepe began slightly later, shortly after 4000 cal BCE, and overlapped with Leylatepe for some time (Fig. 15b). The latest Chalcolithic layers indicating a later reuse of the settlement, date roughly to 3600–3400 cal BCE, aligning with the transition from the Late Chalcolithic to the Early Bronze Age, associated with appearance of the Kura-Araxes

communities. Early Bronze Age burials at Janavartepe have been dated to 3000–2900 cal BCE. One of the Bedeni burials was dated to 2300–2150 cal BCE. Two more dates from the Common Era originate from Strata 2 and 1 in the northern part of Area C.

Burials and physical anthropology. Eight tombs were discovered at Janavartepe during the 2022 field campaign (L2009, L2010, L2015, L2023, L2024, L2078, L2085, L2090). The archaeo-anthropological study of the burials initially focused on the biological analysis of the skeletons, including sex determination, age-at-death estimation, dental health assessment, and the identification of bone pathologies.

All burials are individual except for L2023. In total, 11 individuals were analysed (Table 3): one adult, one older adolescent, and nine immature individuals, including two who died in the perinatal period.

Bone samples from each individual were collected for radiocarbon dating and isotopic analyses, which are currently underway (conducted by Estelle Herrscher, CNRS, France). Burials from the Late Chalcolithic, Early Bronze Age (Kura-Araxes culture), and Middle Bronze Age (Bedeni culture) were analysed.

Analysing funerary practices will provide insights into burial modes and body positions. However, the Janavartepe burials are exceptional in terms of their chronology. Until now, primary individual burials from the Kura-Araxes and Bedeni periods were unknown in this region.

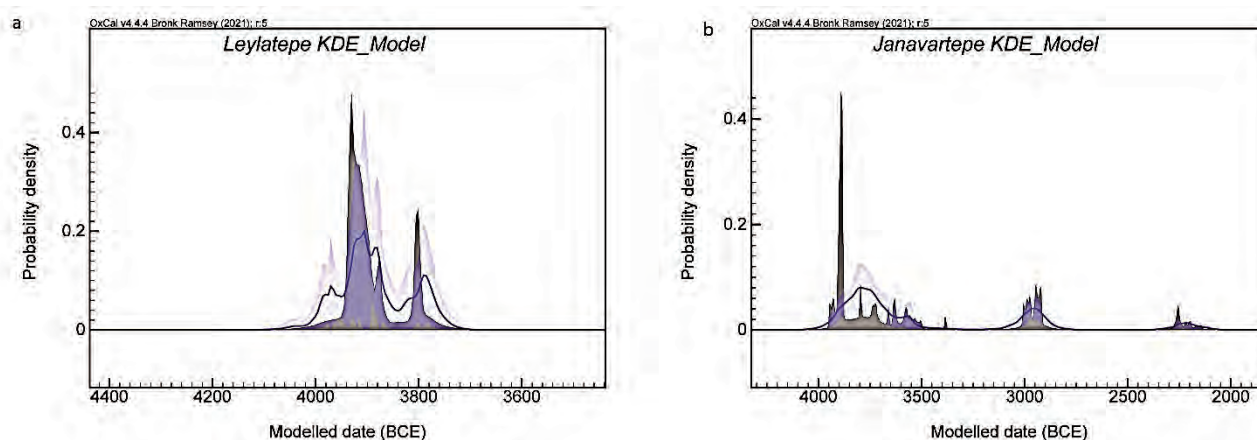


Fig. 15. Kernel density plots for the Late Chalcolithic and Bronze Age periods from the (a) Leylatepe and (b) Janavartepe.

Table 4. Burials at Janavartep, 2022.

#	Burial Number	Period	Adult/Immature
1	L2090 B20157	Early Bronze Age	Adult
2	L2085 B20162	Late Chalcolithic	Immature
3	L2010	Late Chalcolithic	Immature
4	L2015	Late Chalcolithic	Immature
5	L.2023 B. 20031.01	Early Bronze Age	Immature
6	L.2023 B20031 Individual C	Early Bronze Age	Immature
7	L.2023 B20031 Individual A	Early Bronze Age	Immature
8	L2023 B520031 Individual B	Early Bronze Age	Immature
9	L2078 B20124	Bedeni	Adolescent
10	L2024	Late Chalcolithic	Immature
11	L2009	Bronze Age?	Immature

CONCLUSIONS

Leylatepe and Janavartep are geographically close (2.6 km) and are part of the same cultural phenomenon. They have coexisted for some time, but have different characters. The layers of the 40th to 38th centuries BC (cal. 4010-3760 BC) at Leylatepe consist of frequently changing settlement layers with rectangular mudbrick structures, plastered surfaces, food preparation areas, pits, and a two-chamber pottery kiln. The Late Chalcolithic Janavartep layers contain rounded dugouts, plastered surfaces, infant burials, and pits.

Impressions of at least seven seals were found in two dugouts at Janavartep, indicating that at least seven people performed administrative tasks and sealed goods. Who were these people? What was the nature of the relationship between these settlements?

Continuing our project will answer many interesting questions about the Leylatepe phenomenon and contacts with near and distant regions.

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EXCAVATION AT KÜLTEPE II IN NAKHCHIVAN, 2024: FIRST PRELIMINARY REPORT

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Abstract

Kültepe II is a significant Bronze Age site in Nakhchivan, offering valuable insights into social and political organisation, settlement patterns, subsistence practices, and resource management during this period. This study presents the preliminary results of the Azerbaijan-German joint expedition conducted in the summer of 2024. Excavations focused on newly opened trenches in the southern part of the site, revealing rectilinear architectural spaces, a complex burial context, and a diverse assemblage of macro-lithic tools, including hammer stones, pestles, mortars, and grinding stones. These artefacts reflect domestic and subsistence activities within the settlement. The findings contribute to understanding material culture, site organisation, and economic practices during the region's Middle and Late Bronze Age. One of the most notable discoveries is the presence of multiple individuals in non-standard burial arrangements, suggesting a possible communal or emergency burial. The positioning of bodies, with some appearing to have been hastily deposited, raised questions about the nature of their interment, possibly linked to a sudden event such as conflict.

Keywords: *Kültepe II, Nakhchivan, Middle Bronze Age, Fortress, Burial.*

INTRODUCTION

The archaeological significance of Nakhchivan lies in its rich history, strategic location, and abundant natural resources, making it a focal point for understanding broader cultural and environmental dynamics in the South Caucasus and beyond. At the crossroads of trade routes connecting the South Caucasus, Anatolia, and the Iranian Plateau, Nakhchivan has historically been a transit zone for cultural and technological exchanges. Furthermore, the Araxes River, flowing from west to east, along with the Arpachay, Nakhchivanchay, and Gilanchay valleys, which merge into it, served as key crossroads and corridors for the movement of people and ideas during different periods (Maziar, in press).

One of the most important archaeological sites in this region is Kültepe II. The site is located at 39° 19' 13,03" N, 45° 26' 49,14" E, approximately 10 km north of Nakhchivan city, near Didivar and Nazarabad on its western side (Figs. 1, 2) and 4-5 km away from Kültepe I, which serves as one of the key reference sites among the archaeological sites in

this region (Marro *et al.*, 2019). It was established during the Kura-Araxes period (KA, 3300-2500 BCE) on an alluvial terrace at 965 m.a.s.l. at the confluence of the Nakhchivanchay and Chehrichay rivers. Over time, parts of the site have been heavily affected by erosion from the Chehrichay to the south, as well as by agricultural activities and past excavations, specifically on the mound's eastern, northern, and western flanks.

During the Araxes Archaeological Expedition in 1960, V.H. Aliyev identified Kültepe II (Aliyev, 1962) with preliminary excavations conducted in 1962 (Abibullayev, 1982). Excavations at the site continued from 1968 to 1987 (Aliyev, 1979, p. 3). The findings and excavation reports from these expeditions are preserved in the archives of the Institute of Archaeology and Anthropology at the Azerbaijan National Academy of Sciences (ANAS).

According to Aliyev, the upper layers of the site date to the Late Bronze-Early Iron Age; however, these layers have been heavily disturbed across the entire site. Below this phase, a well-preserved Middle Bronze Age occupation (ca. 2400-1500 BCE)

was uncovered. Aliyev's excavations revealed several architectural features, including rectangular structures and towers enclosed by a fortification wall built with large river stones bonded with clay mortar. He estimated the wall to be approximately 35 meters long, 2-2.5 meters wide, and 1.4 meters high.

Aliyev proposed that the site was divided into two main areas: the Naringala, which consisted of various stone structures and a fortification wall reinforced with quadrangular towers and buttresses, and an external settlement area beyond the walls. He also documented the remains of stone pavements in different parts of the site. Surrounding the Naringala, he identified a ditch beyond the fortification walls, measuring approximately 3 m in width (*ibid.*).

Aliyev interpreted Kültepe II as a fortress town during the Middle Bronze Age, covering approximately 7 hectares, of which only 3 hectares remain today (Aliyev, 1972). He suggested the site was abandoned after the 15th century BCE (Aliyev, 1978).

In 2006, a joint Azerbaijani-American team excavated a 1.5 m sondage in the southern part of the site, adjacent to the eastern side of the area, which had previously been excavated by Aliyev (Ristvet *et al.*, 2011). The main objective of this investigation was to establish a ceramic and radiocarbon sequence for the Early Bronze Age and to examine the subsistence economy of the site's inhabitants. This excavation revealed a 6.8 m. thick KA deposit beneath the architectural complex. In other words, according to their results, the initial occupation of the site dates to the KA period, likely around 3360-3013 cal BCE, with a median date of 3195 BCE (Ristvet *et al.* 2011, Table 1). The same year, they conducted another excavation at Makhta I (*Makhta I*), a Kura-Araxes site in Nakhchivan. The available dating from the middle layers of the Kura-Araxes deposits at Makhta corresponds to the lower layers of Kültepe II (Bakhshaliyev *et al.*, 2009). Accordingly, one of the primary objectives of the newly established Azerbaijan-Germany expedition is to refine the cultural development and chronology of the Kura-Araxes culture in Nakhchivan.

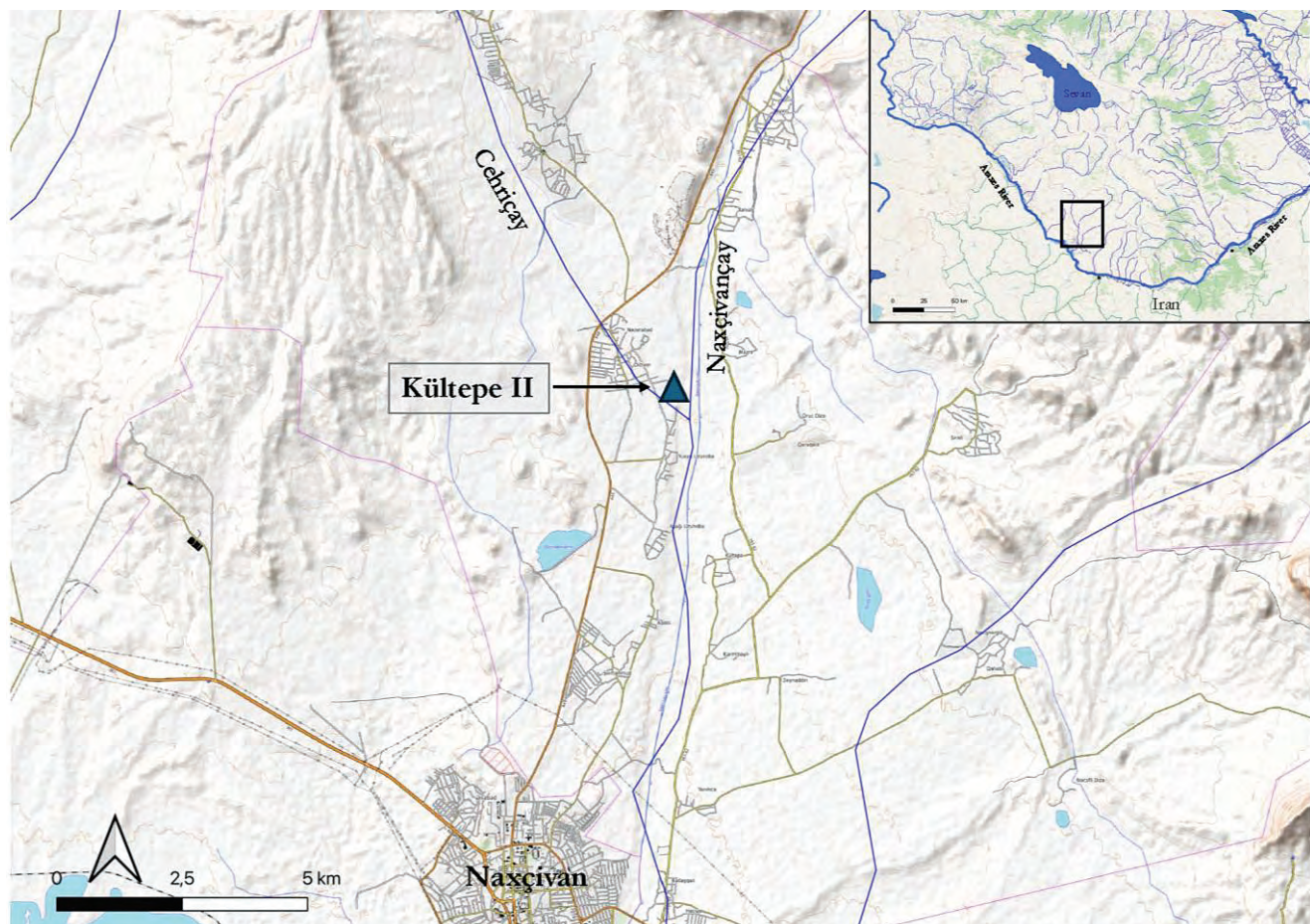


Fig. 1. Location of the Kültepe II in Nakhchivan

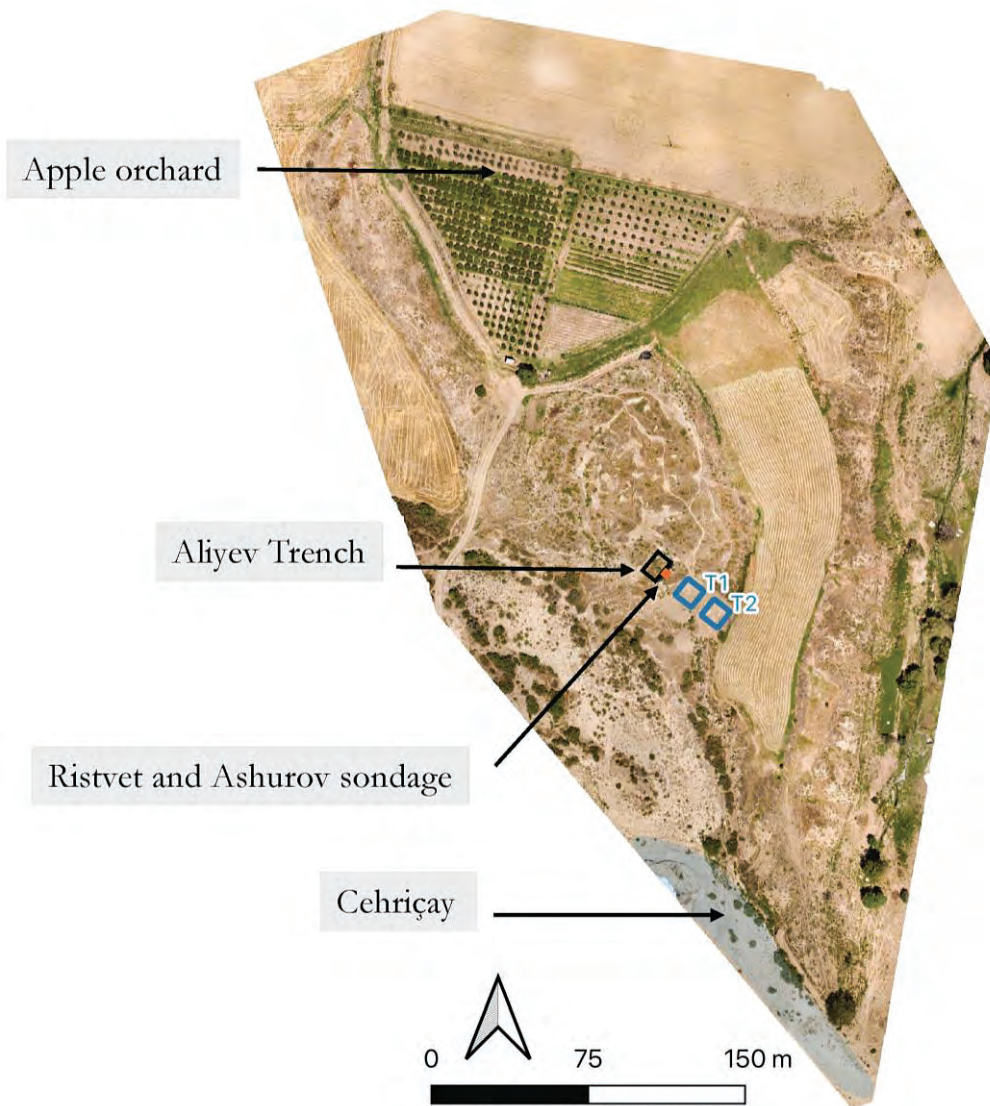


Fig. 2. Locations of excavated trenches from previous seasons and 2024 at Kültepe II

Excavation at Kültepe II: The First Excavation Season in 2024

In the summer of 2024, a joint Azerbaijani-German research project initiated an excavation campaign at Kültepe II in the Nakhchivan Plain. The project explores human-environmental interactions and examines synchronic and diachronic transformations during the site's Early and Middle Bronze Age phases. Additional objectives include reconstructing the paleoenvironmental conditions and providing a high-resolution understanding of the site's inhabitants' daily practices, particularly during the KA period. The first preliminary report of this excavation is presented below.

Before the excavation, the site and its surroundings were surveyed and mapped. The site was first divided into five sections and systematically examined by team members, who

surveyed in one-meter-wide transects across the entire area to document the distribution of artefacts and estimate the site's extent. Surprisingly, no pottery sherds were found in the eastern part of the mound, an area now under cultivation. This absence may suggest that either the deposits in this section were extremely thin and have been entirely removed, leaving no visible surface traces, or that this area marked the original boundary of the settlement.

A similar pattern was observed in the northern and northeastern parts of the site, where erosion has left only a narrow remnant of the mound. In the apple orchard area in the north and northwestern part of the site, among the apple trees, fewer than five sherds were recovered during the survey (Fig. 2). However, visible remains of stone walls and Middle Bronze Age pottery sherds were

documented in the remaining portion of the mound in the western part of this area. Accordingly, while previous sources estimated the site to be approximately 10 hectares in extent (Ristvet *et al.*, 2011, p. 10), our survey suggests that, based on surface material distribution, the current site area is estimated to be 3 hectares. To refine these estimates and better define the site's boundaries, we plan to conduct systematic test trench excavation during the next field season.

As previously mentioned, the Middle Bronze Age complex encompasses the entire site, comprising stone fortification walls and rectangular, stone-built architecture. Multi-roomed buildings, streets, and open spaces are visible on the surface, reflecting the site's complex layout during this period. The extent of the Kura-Araxes occupation is not yet entirely determined; however, the density of pottery sherds documented during our survey is highest in the southern part of the site. This concentration may also result from the extensive excavations conducted by Veli Aliyev in this area.

The locations of the trenches were determined based on the findings of previous excavations at the site and the density of the pottery sherds on the surface. Both teams uncovered a deep KA deposit phase in the southern part of the site, prompting us to place our trenches near their excavation areas to ensure access to the KA phase. Additionally, Aliyev's work had already removed much of the Middle Bronze Age layer from this part of the site, allowing quicker accessibility to the KA deposits. The last excavation of the site was in 2006, directed by Lauren Ristvet and Safar Ashurov (Ristvet *et al.*, 2011). As the thorough history of excavation has already been published, we do not report it here. Ristvet *et al.* (2011) reported that their published stratigraphic sondage reached the KA phase directly beneath the topsoil. To establish a clear view of the stratigraphy and to compare our findings with their dating and artefacts, we positioned our trenches close to their sondage, using it as a reference point. Their 1.5 to 1.5 m sondage documented 6.8 m. of KA deposits across 44 occupation levels, with no overlying Middle Bronze Age structures. This finding supported our decision to target this area as the most efficient location for accessing the KA phase while minimising the need to remove large MB stone structures. Furthermore, as parts of the fortification walls are located in this area, and regulations set by ANAS prohibit their removal, our trenches were

established along the orientation of these walls to avoid disturbing them.

During the 2024 season, two 10 by 10 m trenches, designated as T.I and T.II, were opened in the southern part of the site near the excavation areas of Aliyev and the 2006 expedition's trenches (Fig. 2). The locus (L.)/feature (F.) system was employed to document all findings systematically. In T.I., 27 loci and 17 features were identified, while in T.II, 12 loci and six features were recorded, and the excavation stopped at a depth of -120 cm from the top of the trench (969.32 m.a.s.l.). The findings from each trench are described in detail in the following sections.

Trench 1

From the outset, large stone walls were visible on the surface of this trench (Fig. 3). Upon removing the surrounding soil, a rectangular room was revealed in the northwestern part of the trench (Figs. 1, 4). Based on the considerable width of the walls (ca. 100-150 cm), this structure could represent one of the towers, marking the latest architectural phase in this trench. The outer facade of the walls was constructed with large stones, while the interior appeared to be filled with smaller stones and clay. The interior of this space was filled with highly compacted clay (L.2).

This stone structure cut a mud-brick wall (F.5), of which only a single row was preserved. The mudbrick wall, oriented differently from the stone architecture, represents an earlier phase of construction. A small, built oven adjacent to F.1 in the open area indicates sporadic reoccupation or visits to the site following the destruction of the building (Fig. 3, F.3). After removing this stone structure and the mud-brick wall, several pits were uncovered (Figs. 11, 12, 13). One of the pits was intriguingly filled with stones (Fig. 5), while another (Fig. 11, L.16) contained green-yellowish deposits. A third pit (F.13) was filled with ash, pottery sherds, and animal bones, suggesting refuse disposal or other activities.

In the eastern part of the trench, another space was unearthed. However, its walls did not form a regular rectangular space (S.2). Based on the findings within this area, such as large storage jars (Fig. 6), burned deposits, thick burned timbers, and remnants of thatched clay, it can be inferred that the space was roofed. The construction of the northeast-southwest wall (F.5) differed significantly from that of the northwest-southeast wall (F.2). The former was built with smaller river stones arranged in two

rows. In comparison, the latter included larger stones alongside two rows of smaller river stones (Fig. 4). We assume the original wall construction featured two rows of smaller stones, with later latter included larger stones alongside two rows of smaller river stones (Fig. 4). We assume the original wall construction featured two rows of smaller stones, with later renovation incorporating larger stones of varying sizes. Four rows of this wall were preserved.

A pit (F.6) cut into the deposits of this space (S.2), contained ash and pottery sherds (L.9). Inside this space, the following artifacts were discovered: four storage jars, six grinding stones, eight pestles, six mortars, two salt hammer stones, one potter's wheel of stone (Fig. 7), and remains of baked clay. Although the floor surfaces were heavily disturbed due to later destruction, scattered remains suggest that this space was used for an extended period, with evidence of at least three floors' renovation. Since the storage jars were not blackened with soot and no burn marks were observed on the other artefacts found within the space, it can be suggested that the conflagration occurred after the space had been abandoned and filled with roof and wall debris.

On one of the floors inside this space, a notable feature (Fig. 8, F.7) was identified in the northeastern part of the space. The feature

comprised a circular area with a diameter of approximately 2 m, exhibiting a greenish-orange hue indicative of heat exposure. Ash deposits were also visible both on the surface and around this feature. The function of this feature remains unknown. A bronze earring was found close to it (Fig. 6). After clearing the area, remains of mud-brick rubble, burned zones, and compact and loose clays were observed across much of this area. However, a compact clay deposit (L.15, L.26) stood out from the surrounding rubble in the northwestern and western parts. By the end of the excavation season, this area remained undefined, without a clear structure. The remaining trench parts were filled with loose soil interspersed with scattered stones, suggesting it was likely an open space. Scattered painted sherds and animal bones, including large animal jaws, were discovered here.

In the southern part of the trench, the remains of another mud-brick wall (F.9), which was heavily eroded, were identified alongside a stone wall running parallel to it. Additionally, a filled stone structure without any discernible shape was uncovered (F.15). During the excavation of this wall, or upon examining the section after its removal, no evidence of a mud-brick wall was observed, indicating that this wall was more likely constructed as a cob wall.



Fig. 3. Middle Bronze Age stone architecture on the surface of Trench I, Kültepe II

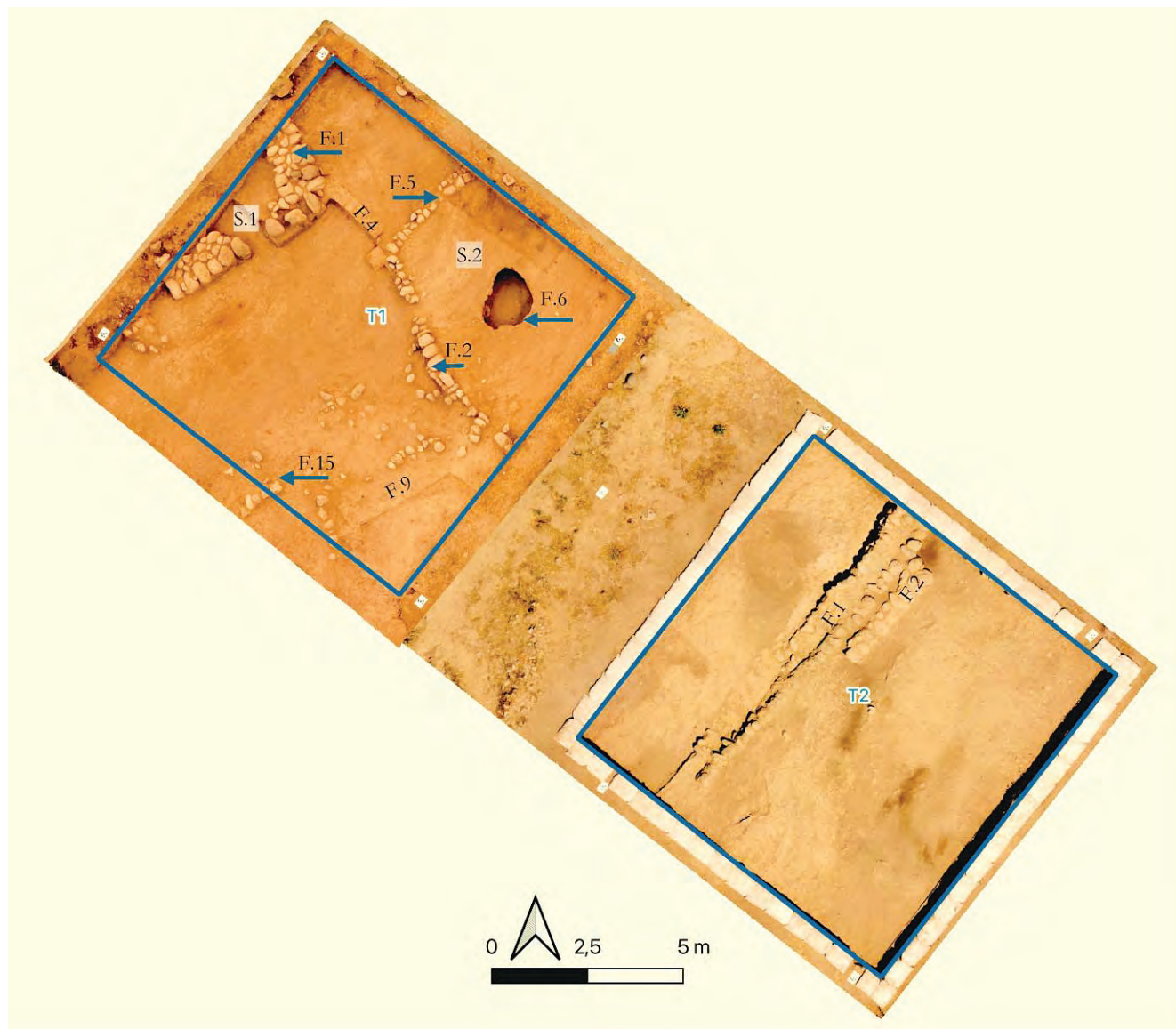


Fig. 4. Middle Bronze Age stone architecture excavated in Trench I and II, Kültepe II



Fig. 5. Middle Bronze Age pit filled with stones, Kültepe II

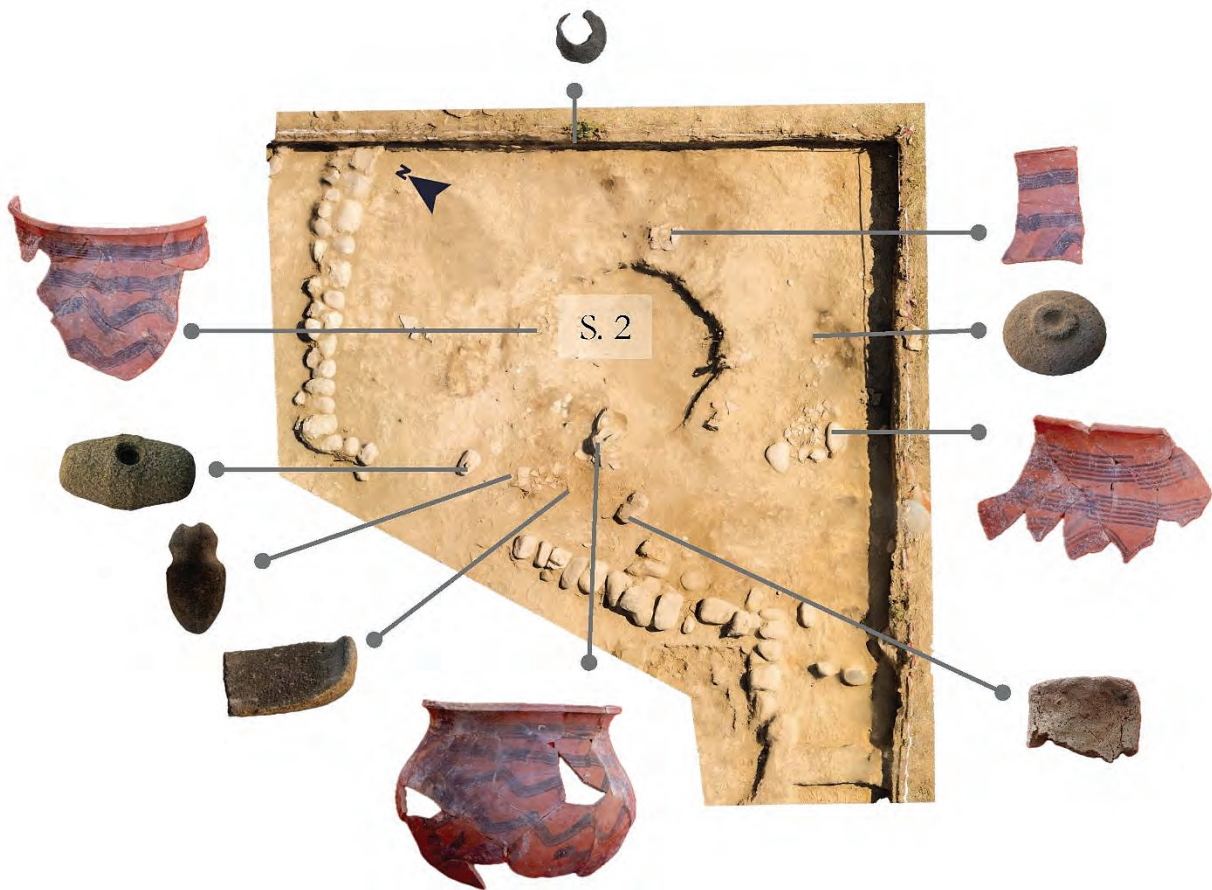


Fig. 6. Distribution of the findings inside Space 1, Trench I, Kültepe II



Fig. 7. Stone pottery wheel found at Space 2, Trench I, Kültepe II



Fig. 8. Burned area (F.7) inside Space 2, Trench I, Kültepe II

Trench 2

This trench was opened 6 m away from T.I. on its eastern side. After removing the topsoil, a large concentration of pottery sherds was found. It appears that this area was used as a dumping ground for pottery fragments during Aliyev's excavation. Once this area was cleared, the remains of stone walls, eroded mud-brick remains, and pits became visible (Fig. 4). A north-south oriented wall (Fig. 1, 2), running parallel to the walls of the complex at the top of the site, was uncovered. This

feature was directly comparable to feature 2 in T.I. A stepped structure was attached to the eastern part of the wall. Similar to F.2 in T.I, evidence of multiple phases of the renovation was observed. Two large pits in the western part of the trench cut through the deposits (F.3, F.5). These pits were filled with burned, brownish deposits. Additionally, compact clay remains were identified in this area. On the eastern side of the wall, loose deposits, small ovens, and scattered stones were visible on the surface, suggesting that this area also functioned as an open

space during the Middle Bronze Age. On the western side of the wall, inside the ash deposits, five pastels, two salt hammer stones, and three mortars were discovered.

One of the significant discoveries in this trench is the remains of four individuals in the northern part of the trench, outside but close to the wall (Figs. 9, 10). No grave cut was identified around them. Since the wall and its foundation extend deeper, these individuals appear to be contemporaneous with the stone complex or deposited later. The skeletons were found in varying positions, which may indicate differences in burial treatment or deposition circumstances. Their relative orientation and proximity suggest they may have been intentionally buried together, possibly reflecting their connection. The arrangement could also represent a single burial event or collective burial practice conducted somewhat haphazardly, potentially indicative of a communal or emergency burial rather than carefully arranged individual interments. Among the individuals, only one (Individual No. 2) was positioned in a flexed or crouched posture. In contrast, Individuals 1, 3, and 4 were in more extended but slightly curved positions.

Except for Individual 2 (the numbering follows the order in which the skeletons were discovered, proceeding clockwise), the positions of the other

individuals suggest that they were pushed or thrown on top of one another. Individual 1 is on its back, facing upward, with its legs positioned above Individual 2's upper body. Individual 2, the only one seemingly buried with more intention, is positioned in a fetal state, with its feet placed on top of Individual 3's head and shoulder. Individual 3 is oriented in a different direction from Individuals 1, 2, and 4, with its feet resting on the back of Individual 4. Individual 4 is face down and appears to have been thrown onto the surface. The overlapping skeletal elements show simultaneous deposition rather than sequential burials. Based on the positioning of the skeletons, it appears that Individual 4 was the first to be buried, oriented in a completely different direction. Individual 3 was then placed over Individual 4, with the head facing east, while Individual 2 was interred in a fetal position, with their feet resting over Individual 3's head. Finally, Individual 1 was deposited on its back, with its feet positioned over Individual 2's body. The differing orientations (some facing up, others facing down) further support the idea of a non-standard or rushed burial practice, likely in response to a sudden event, such as a conflict. The absence of a clear grave cut or defined burial space implies that the individuals were placed or thrown into a shallow pit on the surface without much effort to organise or arrange them ceremonially.

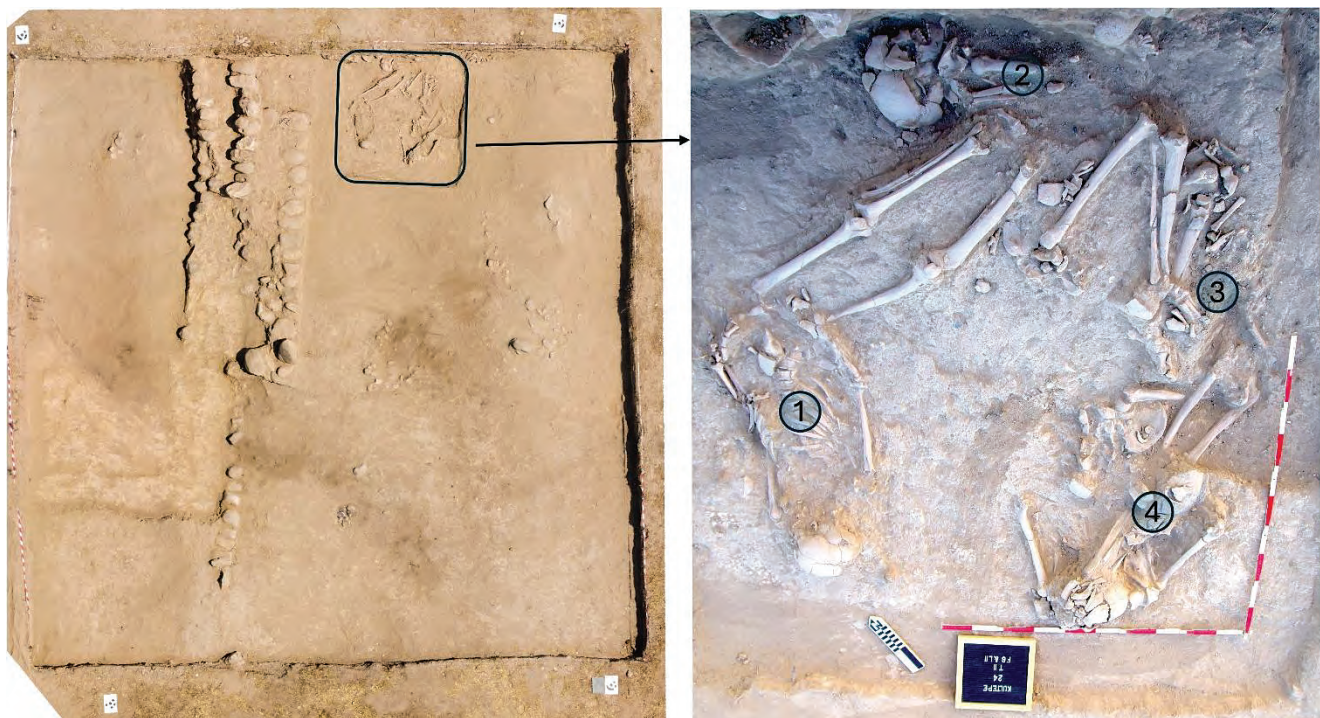


Fig. 9. Location and arrangement of burial in Trench II, Kültepe II

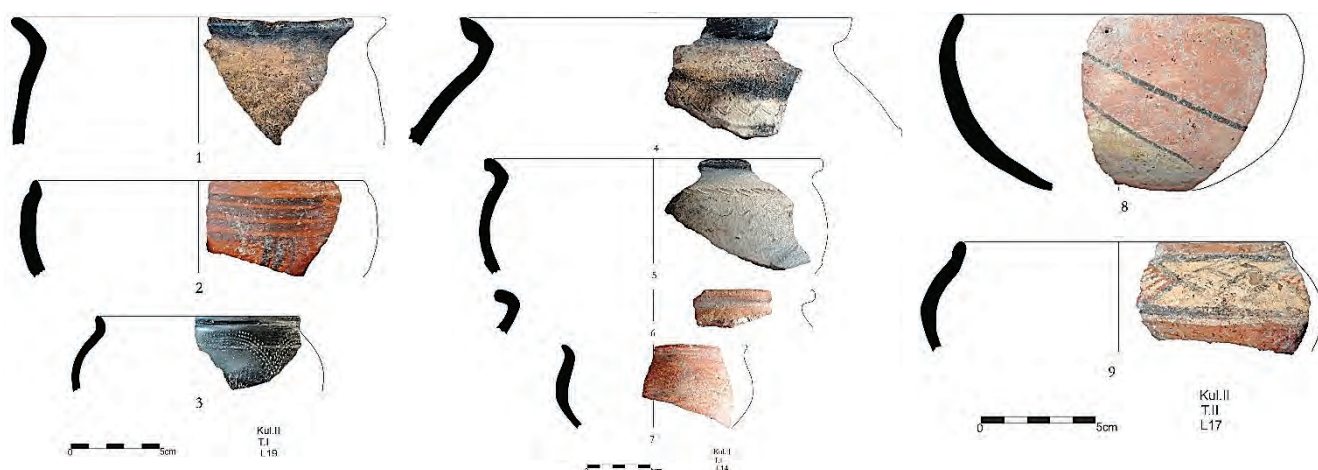


Fig. 10. Middle Bronze Age pottery from Kültepe II

Although the positions and arrangement of these individuals suggest they were not buried and may have been deposited on top of each other, remains of animal jawbones were also found in the vicinity. Given the state of burial and erosion, as the bodies were located very close to the surface, it is unclear whether these animal remains were intentionally placed near the individuals or simply scattered. Anthropological studies on these individuals are currently underway (Ulker Allahverdiyeva is studying the skeletons).

Preliminary Observations of the First Season

The scattered pits, cut through the MBA complex in various parts of the site, represent different phases of stone wall renovations during the Middle Bronze Age. The depth of the Kura-Araxes deposits found suggests that the site was continuously or repeatedly inhabited, but may have undergone significant cultural or functional shifts.

The previously excavated sondage by the joint Azerbaijan-American team identified deposits at 27 cm below the surface of their sondage, dating to 2561-2346 BCE, which should be considered the post-Kura-Araxes phase (Ristvet *et al.*, 2011). According to the descriptions of the sherds, they were composed of black-brown burnished and red-burnished ware. Specifically, one of the sherds with incised decoration resonates with the sherds we found in the post-Kura-Araxes deposit. However, in T.I, despite being at the same elevation and just ca. 7 m. away, the material culture corresponds to the Middle Bronze Age, dated to the 18th century BCE, with red-black painted potteries and incised black burnished sherds typical of this period. This stratigraphic inconsistency could be related to erosion or different site formation processes. The

natural processes might have eroded or truncated deposits in one area, thereby altering the stratigraphy. Another possible reason could be that the area within the trenches may have experienced different localised activities. For instance, the area with our trenches might have experienced more intensive Middle Bronze Age occupation, resulting in thicker or more complex deposits. This variability also highlights the importance of micro-stratigraphic analysis in understanding how the Kura-Araxes and Middle Bronze Age phases overlap or differ spatially.

The Middle Bronze Age pottery assemblage consisted of cooking pots, storage jars, and serving vessels, including bowls. The majority of the assemblage is composed of handmade, plain orange and slipped buff wares (Fig. 10: 1, 6, 7), as well as red slip-burnished wares with black geometric decoration (Fig. 10: 2, 8). In addition to this dominant group, there were also handmade black burnished jars with incised decoration (Fig. 10:3), burnished decoration, and multi-chrome painted wares featuring buff, red, and black colours (Fig. 10: 9), although these were less prevalent. Some cooking pots also exhibited engraved or incised decoration (Fig. 10: 4, 5).

Among the stone tools, salt hammer stones, as well as grinding stones, pestles, and mortars, are very common. Specifically, nine salt hammer stones, mainly types C, D, and F (Hamon *et al.*, 2021; Fig. 3, 5), were found during the excavation (Fig. 11). Such tools were found predominantly at the Duz Dagh salt mine and nearby sites, including Kültepe I, which shows their association with salt production (Marro, 2021). While Aliyev first dated them to the second half of the 2nd millennium BCE (Aliyev, 1966),



Fig. 11. Hammerstone from the Middle Bronze Age phase, Kültepe II

recent studies demonstrate that the salt mine was exploited from the second half of the 5th millennium BCE (Hammon *et al.*, 2021). The macro-lithic findings at Kültepe II indicate that salt processing was also a predominant activity during this period. The pottery assemblages are comparable to those of other contemporary sites in Nakhchivan, such as Shakhtakhti and Shortepe (Aliyev, 1983), as well as the Dize necropolis (Aliyev, 1977, p. 140), all of which are dated to the 17th and 18th centuries BCE.

Excavation will continue in both trenches next season to reach the Kura-Araxes phase at the site. Another main objective of the expedition is to explore the transitional phase between these periods to determine whether the transition was sporadic or gradual, while also gathering palaeoenvironmental evidence from the post-Kura-Araxes phase.

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RECENT RESEARCH ON UZERLIKTEPE: A MIDDLE BRONZE AGE SETTLEMENT IN THE AGHDAM REGION, AZERBAIJAN REPUBLIC

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Abstract

After a hiatus of approximately 70 years, archaeological investigations have resumed at the Uzerliktepe settlement, which is recognised as one of the largest Middle Bronze Age settlements in the South Caucasus. New archaeological research carried out by the Institute of Archaeology and Anthropology of ANAS in 2022 and 2023 covered an area of 800 sq m (eight excavation trenches) on the south of the hill's central part. The new data presented in this article indicate that the settlement consists of multiple clay floors, each approximately 0.5 m thick. One of the key issues making these excavations particularly significant is the growing recognition that the term "Sevan-Uzerlik," initially coined based on the ceramic decoration, does not correspond to the results of pottery analyses. Moreover, the current interpretation of the origins of the so-called cultural and archaeological groups associated with this term remains contentious.

Keywords: *Uzerliktepe, Middle Bronze Age, Southern Caucasus, Trialeti, Tazakend*

INTRODUCTION

Uzerliktepe is situated along the Aghdam-Hindarkh Road, providing access to the city of Aghdam from the east in the Republic of Azerbaijan. The settlement is located at an elevation of 374 meters above sea level (GPS coordinates 39°59'42.792 N 46°56'45.3732 E).

The initial archaeological investigations at Uzerliktepe were conducted between 1954 and 1956 by K. Kushnareva, a researcher affiliated with the USSR Academy of Sciences. At its highest point, the mound reached an elevation of 9.8 meters, with a diameter of 202 meters from north to south and 196 meters from east to west. The excavations, which were concentrated in the eastern part of the mound, covered an area of 484 square meters (Kushnareva, 1957, p. 397; Kushnareva, 1965, p. 74).

Uzerliktepe is the largest Middle Bronze Age settlement in the South Caucasus in terms of area and cultural deposits. Excavations at the site have revealed the remains of clay block structures, domestic pits, pottery sherds, and fragments of agricultural tools made from bone and antler, along with other artefacts dating to the Middle Bronze Age. The primary occupation of the settlement during the Middle Bronze Age occurred in two distinct phases. In the first phase, the settlement

experienced episodes of conflict and fire. According to Kushnareva, the site was inhabited from the early 2nd millennium BCE until the 15th century BCE (Kushnareva, 1957, p. 420).

The radiocarbon analysis of a charcoal sample taken from the middle level of the settlement in the laboratory of the Institute of Archaeology of the Academy of Sciences of the former USSR yielded a date of 3300±260 years BP, i.e., approximately 1340±260 years BCE (mid-14th century BC) (Kushnareva, 1965, p. 99).

K. Kushnareva's preliminary research on the Uzerliktepe archaeological site was initially published in Russian (1957, 1959, 1965) and subsequently synthesised in a comprehensive overview (Kushnareva, 1994). Based on these works, the only widely circulated English-language source on the Uzerliktepe is her contribution to the 1997 monograph series of the University of Pennsylvania Museum of Archaeology and Anthropology (Kushnareva, 1997, pp. 81–151).

The uppermost part of the mound is covered with Muslim burials, which date to the modern period (late 19th to early 20th centuries). These graves were part of a cemetery situated in the western section of the hill, an area that was not subjected to archaeological excavations

(Kushnareva, 1957, p. 420).

Since the early 1990s, the site remained in the occupied zone during the period when approximately one-fifth of the territory of the Republic of Azerbaijan was under the control of Armenian military forces. During this time, an anti-aircraft battery of occupying forces was installed on the hill.

New Research at the Site

Archaeological investigations at Uzerliktepe, located to the east of the recently liberated city of Aghdam, commenced in February 2022 and continued through November of the same year. The 2022 excavations were directed by Dr. Farhad Guliyev, with Dr. Parviz Gasimov serving as deputy head of the expedition. In 2023, fieldwork resumed in Trench H of the site under the direction of Dr. Parviz Gasimov. No excavations were conducted in 2024, but archaeological research is scheduled to resume in 2025.

The current shape of the mound no longer reflects the original, asymmetrical round shape as described in earlier studies from the 1950s. Currently, the mound has an irregular, roughly square shape, cut off on four sides by roads. This transformation is the result of both long-term changes during the Soviet era and the destructive actions carried out by occupying forces.

The plan of the northern part of the mound,

compiled during the 1960s excavations (Kushnareva, 1994, p. 119), shows a slightly narrower outline compared to the current extent visible on Google Earth (Fig. 1). Despite disturbances, portions of the original profile, including cultural layers, can be traced in this part, although they are no longer intact. A tall metal fence was erected around its perimeter to protect the site.

The eastern side of the mound has been deformed primarily by the formation of ravines, which likely resulted from archaeological excavations conducted in the 1950s. The western part of the site consists of a sloping foothill, while the southern side leads into descending foothills, but has been extensively disturbed by large-scale excavations on the eastern side of the site. A small part of the mound remained behind the fence, particularly in the southeastern area, where the alignment of the fence visibly marks this deviation.

The current dimensions of the mound differ notably from those recorded during investigation in the 1950s. Today, it measures approximately 151 m from north to south and 153 m. from east to west.

Studies conducted after the occupation period revealed that tombstones characteristic of Muslim cemeteries, dating to the late 19th and early 20th centuries, were destroyed during the occupation. Only a few fragments of these tombstones are currently known to exist.



Fig. 1. Uzerliktepe, drone view from the west (captured on 10/18/22).

During the site survey, numerous pottery sherds and obsidian fragments were observed. These artefacts were primarily concentrated in the area formerly occupied by the late medieval Muslim cemetery, located on a natural rise in the eastern part of the mound. Surface materials were relatively scarce in the northern and southern parts, where the site remains largely undisturbed. However, in areas affected by anthropogenic disturbance, such as ravines in the east and military trenches in the southwest, pottery sherds, obsidian fragments, and other cultural materials from various periods have been recorded.

MATERIAL AND METHODS

An excavation area comprising eight squares, each measuring 10 m × 10 m (100 m²), was established, resulting in a total excavation area of 800 m². The trenches were established near the centre of the mound, close to the ravines along the eastern slope. The selection was based on the premise that if the 1950s excavations uncovered a defensive wall of a Middle Bronze Age settlement at the eastern foot of the mound, then the associated architectural complexes were likely located further west, towards the centre.

To ensure consistency with international archaeological practices, the trenches were labelled using the English alphabet. The northernmost trench was designated as A, with the adjacent southern trench labelled B. Two additional squares, C and D, were later opened to the north of Trench A. In August 2022, four further trenches – E, F, G, and H – were opened to the south. Each trench was subdivided into smaller units (e.g., A1, A2, B1, B2, etc.) along a central north-south axis, enabling more precise spatial and stratigraphical documentation.

Each trench was subdivided into two areas of 50 m² (5 × 10 m). The area extending from the centre of the trench to the eastern baulk was designated as Area 1, while the section from the centre to the western baulk was designated as Area 2 (See Figs. 1, 2).

During excavation, architectural structures, primarily domestic structures, as well as rubbish pits, hearths, and hearth-related features, along with the remains of pottery kilns, were documented and assigned sequential context numbers, starting from number 1.

Excavation was halted in certain areas upon completion of documentation, and conservation measures were implemented to ensure the preservation of exposed features.

SOME INITIAL RESULTS OF THE RESEARCH

Archaeological excavations at the Middle Bronze Age settlement of Uzerliktepe, conducted between February and November 2022, resulted in the identification and study of 160 pits (domestic, rubbish, and of indeterminate function) of various sizes and elevations. Additionally, 50 hearths and hearth installations, the remains of three pottery kilns and one furnace used for metal smelting, 15 architectural features composed of clay block and clay mixture (of as yet undetermined function), four wall remains, and 21 large and medium-sized posthole features were recorded.

A large number of ceramics and potsherds were recovered, including black-burnished, painted, and coarse household vessels. These were characteristic of the various occupational phases of the Uzerliktepe site and the broader cultural complex. The ceramics were found on floors, within rubbish pits of uncertain function, and around the pottery kilns.

Material evidence for various craft and subsistence activities was recovered, including garbage, remains of metal (mainly bronze), whetstones, grinding stones, mortars, and ash pits containing carbonised seeds. Artefacts such as spindle whorls, bone and metal needles, and perforated tools suggest weaving and textile production. Constructed small holes around the upper perimeter of some pits – interpreted as lid-securing features – indicate their use as household enclosures, possibly to contain young livestock, such as goats (Figs. 3, 4).

Numerous osteological remains of both large and small ruminants offer compelling evidence for the intensive animal husbandry practices. Moreover, the deliberate deposition of agricultural implements and domestic animal remains – including dogs, oxen, and possibly camels – within these pits may reflect ritual or symbolic activities associated with the religious and mythological beliefs of the site's inhabitants.



Fig. 2. Uzerliktepe, drone view (captured on 10/18/2022).

During the excavation at Uzerliktepe, samples of soil, faunal remains, pottery sherds, and by-products of metallurgical activities were taken from a range of domestic pits for laboratory analysis. A charcoal fragment retrieved from structure No. 21 (channel feature) in Area D1 at a depth of 2.87 m was submitted for radiocarbon dating. Analysis conducted by the University of Tokyo in Japan dated this sample to the 17th century BCE, corresponding to Horizon III of the site (Fig. 5). A parallel radiocarbon analysis of charcoal from the same structure, undertaken by Laboratoire CEPAM

(UMR 7264 CNRS, France), revealed the same chronological period (Table 1).

Further investigations conducted in 2023, in Square H, Area 2 (H2), revealed Structure No. 18 — a storage pit with a defined entrance level recorded at a depth of 3.59 m. The bottom of this storage pit extended to a depth of 4.41 m, highlighting the significant stratigraphic depth and preservation of the settlement's occupational phases.

The phases of reconstruction and renovation of the settlement can be correlated with the results of radiocarbon dating.



Fig. 3. Uzerliktepe, Area D1, D1-13 storage pit.



Fig. 4. Uzerliktepe, Area E2, E2-2 storage pit.

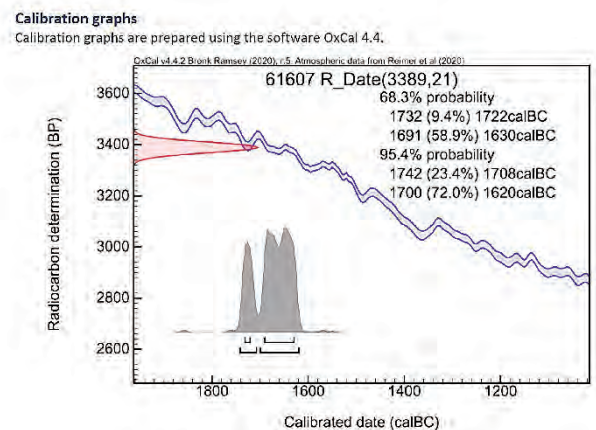


Fig. 5. Histogram of radiocarbon dates, Laboratoire CEPAM (UMR 7264, CNRS).

Table I. Radiocarbon dating results from the Radiocarbon Laboratory of the University of Tokyo (Japan).

Site	Square	Level	Context	ID	14C date	$\delta^{13}C$	1SD (IntCal20)	2SD (IntCal20)
Uzerliktepe	Sq.A1	Horizon II	Pit 11; Depth=2.24 m; April 8 2022	TKA-26448	3404±21BP	-22.6±0.2 ‰	3689 cal BP (27.8%) 3660 cal BP 3648 cal BP (25.0%) 3619 cal BP 3604 cal BP (15.5%) 3586 cal BP	3699 cal BP (95.4%) 3571 cal BP
Uzerliktepe	Sq.A1	Horizon II	Southwest part; Depth=1.99 m; April 8 2022	TKA-26450	3327±21BP	-20.7±0.4 ‰	3568 cal BP (20.2%) 3549 cal BP 3636 cal BP (48.0%) 3492 cal BP	3619 cal BP (2.3%) 3604 cal BP 3585 cal BP (92.5%) 3479 cal BP 3473 cal BP (0.7%) 3468 cal BP
Uzerliktepe	Sq.D1	Horizon III	Pit; Depth=2.87 m; July 24 2022	TKA-26449	3386±21BP	-22.9±0.3 ‰	3680 cal BP (5.9%) 3673 cal BP 3638 cal BP (62.4%) 3578 cal BP	3690 cal BP (21.4%) 3658 cal BP 3648 cal BP (74.0%) 3568 cal BP

Information Obtained From Sections

During the investigation of Area D1 (Fig. 6), the contours of structures were identified in the eastern and southern sections, as well as along the section separating Area D1 from Area D2. These findings enabled new interpretations of these structures, including insights into the construction techniques

employed in the settlement.

On the eastern section of Area D1, the profiles of several domestic storage pits are visible, including pits D1-3 (Fig. 7) and D1-4 (Fig. 8). After these pits were fully excavated and removed, their profiles remained discernible in the eastern wall profile down to the base. It was determined that the profile

of the D1-3 structure on the eastern section closely resembles that of the D1-4 structure (Fig. 9). The diameter at the base of pit D1-4 measures 1.75 m, while the diameter at the mouth (entrance) is 1.05 m.

In the southern section of Area D1, along with the profile of the D1-3 storage pit, the profile contours of the D1-19 domestic pit are also visible. However, careful observation reveals that the D1-3 pit is above the D1-19 structure in the stratigraphy

(Fig. 10), indicating a sequence of use.

In Trench E, the excavation revealed storage pits with well-plastered walls. At the time, K. Kushnareva had noted that pits found on the eastern slopes of the hill were likely intended for short-term use (Kushnareva, 1965, p. 75). However, the domestic pits discovered in Area E2 (Fig. 11) are particularly noteworthy due to their construction characteristics.

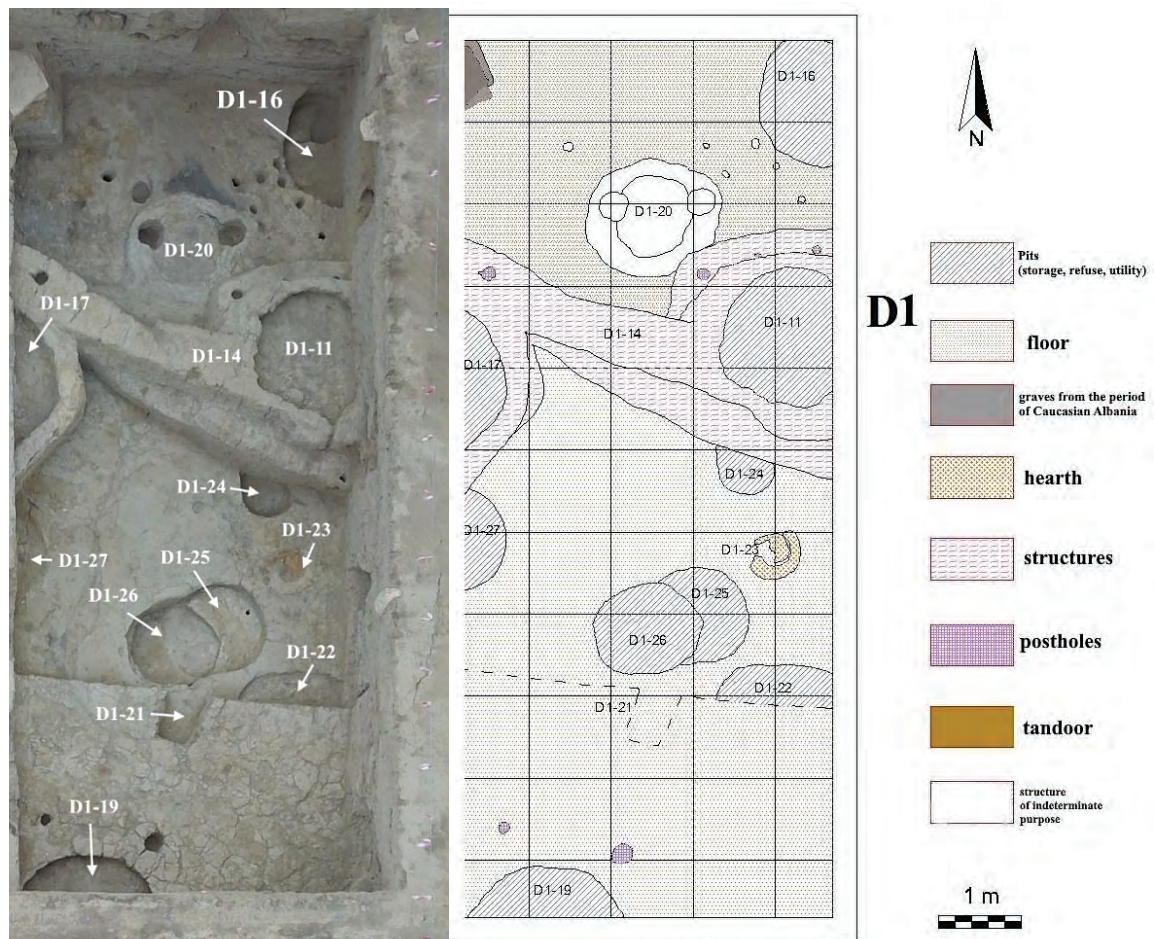


Fig. 6. Uzerliktepe, Area D1. Drone image and schematic plan from the second phase of investigations (captured on 10/18/2022).



Fig. 7. Uzerliktepe, Area D1, D1-3 storage pit.



Fig. 8. Uzerliktepe, Area D1, D1-4 storage pit.

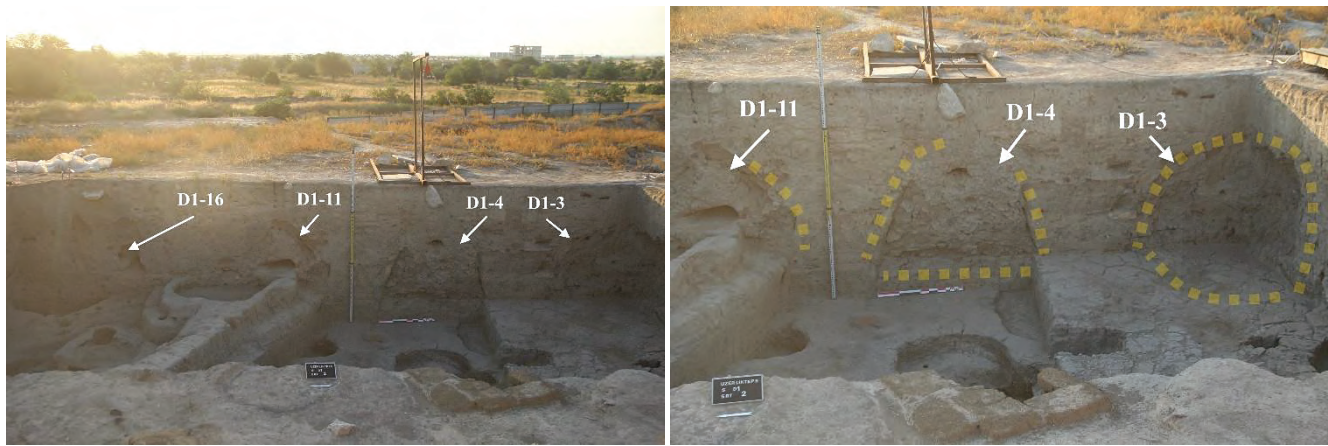


Fig. 9. Uzerliktepe, profile contours of storage pits on the eastern section of Area D1.

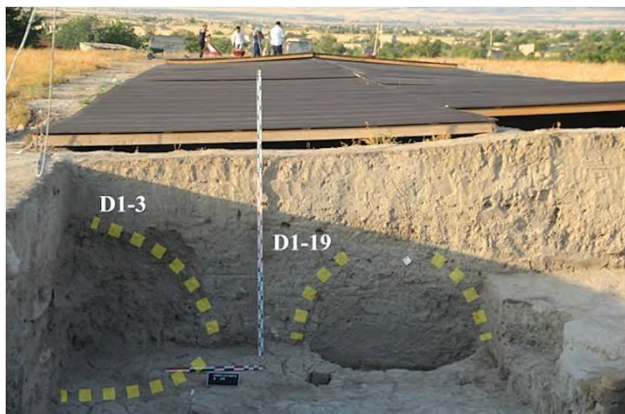


Fig. 10. Uzerliktepe, profile contours of storage pits on the southern section of Area D1.

During the second phase of the investigation, pit E2-1 was examined. Measurements revealed that the difference between the depth at the mouth of the pit (1.53 meters) and the depth at its bottom (2.94 meters) is 1.41 meters, indicating that the total depth of the storage pit is 1.41 meters (Fig. 12).

Following the same method, the depth difference for pit E2-5 in Area E2 was calculated to be approximately 1.38 meters (i.e., 2.76 m minus 1.38 m) (Fig. 13). For pit E2-6 (Fig. 14), the depth difference was determined to be approximately 1.15 meters (i.e., 2.53 m minus 1.38 m).

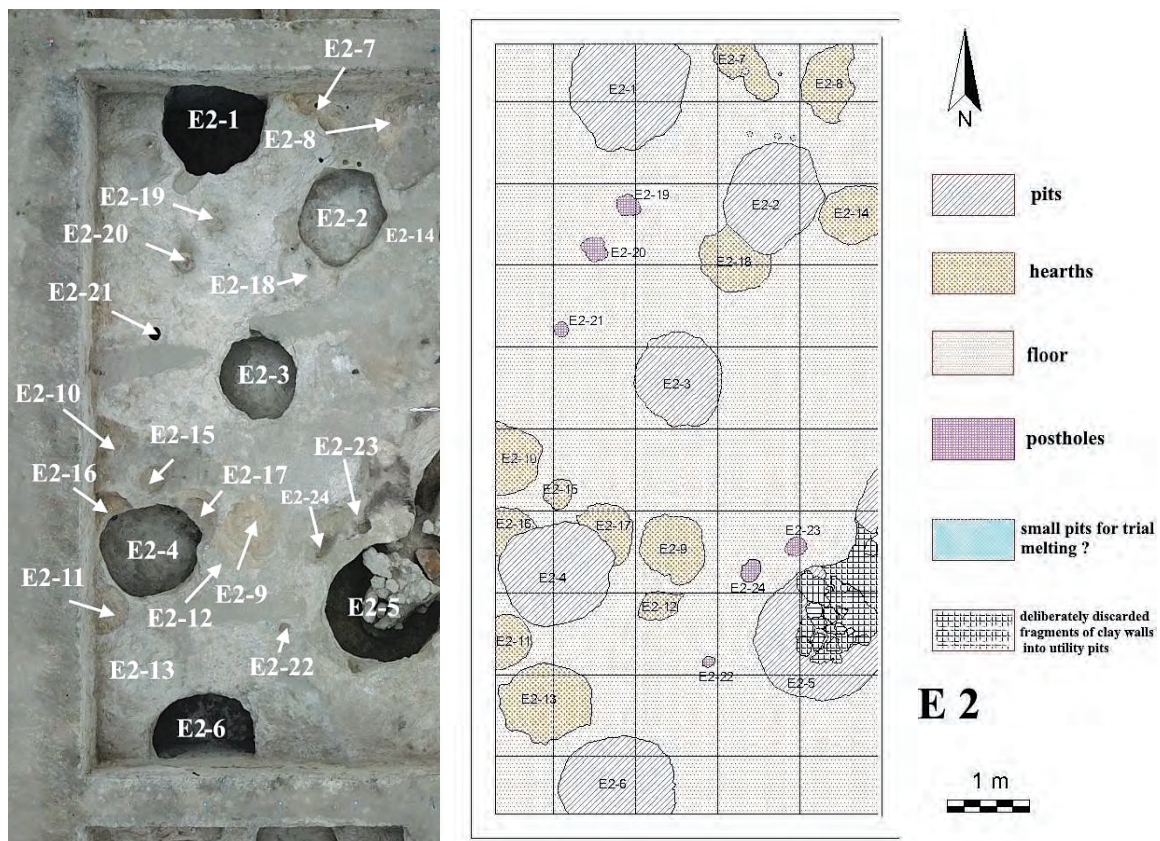


Fig. 11. Uzerliktepe, Area E2. Drone image and schematic plan from the second phase of investigations (captured on 08/22/2022).



Fig. 12. Uzerliktepe, Area E2. E2-1 storage pit, view from the north.



Fig. 13. Uzerliktepe, Area E. E2-5 storage pit, view from the east.



Fig. 14. Uzerliktepe, Area E. E2-6 storage pit, view from the south.

DISCUSSION

Several factors necessitate the continuation of research at Uzerliktepe. In addition to its cultural significance and rich assemblage from the Late Bronze Age, Antiquity, and Medieval (Islamic) periods, it is notable as the only large settlement.

For example, we can indicate that the Jinisi settlement (Georgia, Tsalka district), associated with the Trialeti culture of the Middle Bronze Age, features a particularly notable “dugout

architecture”. Nevertheless, it is considerably smaller in area than Uzerliktepe and exhibits much thinner cultural deposits (Amiranashvili & Narimanashvili, 2005).

As mentioned earlier, during the 1950s, excavation was conducted only on the eastern slopes of the hill, reaching the deepest occupational layers. Before our excavations, no information was available regarding the architectural features of the later occupational phases or the daily life of the inhabitants in the central and western parts of the hill. Future excavations in these unexamined areas are expected to clarify the nature of the early occupation layers across the site.

K. Kushnareva reported the discovery of a clay floor, but her excavations were limited to the eastern part of the hill and concentrated primarily on the earliest phases of habitation. She identified the first clay floor layer directly on the virgin soil (Kushnareva, 1994, p. 121; Kushnareva, 1965, p. 75). However, the contextual interpretation of these findings remains uncertain.

Our research has focused on the highest part of the hill, where the architectural features differ from those at the base. This spatial variability highlights the complexity of the site and underscores the need for a broader excavation.

Another issue concerns the classification of Uzerliktepe within the archaeological and cultural frameworks of the Middle Bronze Age. We must emphasise that the site should not be considered solely in terms of its ceramic assemblage. Despite its importance, Uzerliktepe’s place within the broader typological and cultural system of the Middle Bronze Age in the South Caucasus remains ambiguous. This lack of information further underscores the necessity of continued research.

In most scientific literature, Uzerliktepe is classified as a “group of sites” referred to as the «Севано-Узерлик» (in Russian) / “Sevan-Uzerlik” cultural complex — a term introduced by A. Martirosyan. This classification, which stems from Soviet archaeological terminology, is primarily based on decorations of ceramics and defines the group as a “cultural type,” a “subgroup complex” of the Middle Bronze Age.

Martirosyan observed that the surface decoration on the ceramics from a kurgan discovered during the construction of the Sevan Hydroelectric Station closely resembled those from Uzerliktepe. However, this similarity applies only to specific categories of decorated domestic pottery, which are partially similar to funerary ceramics

from the above-mentioned location. He did not, however, address the broader assemblage of Uzerliktepe ceramics or offer a hypothesis concerning its relationship to the Sevan decorated ceramics. As a result, A. Martirosyan's proposal for the Sevano-Uzerlik cultural complex was based on a selective, rather than comprehensive comparison.

He also suggested that the pottery found in Lchashen Kurgans has analogous decorative elements to those at Uzerliktepe (Martirosyan, 1964, pp. 56-58, 62, 73-74). However, closer analysis reveals that the decorative motifs from Uzerliktepe are not comparable with those in Lchashen ceramics. Therefore, the "typological similarity" would be more appropriate than "analogical similarity" in describing this relationship.

A. Martirosyan grouped Uzerliktepe, Sevan Hydroelectric Station's findings, and Lchashen as sites belonging to the identical chronological period (Martirosyan, 1964, pp. 52-64). In contrast, K. Kushnareva used the expression "Sevan-Uzerlik culture" (Kushnareva, 1983, p. 10; Kushnareva, 1997, p. 129) and classified it as one of five archaeological cultures in the South Caucasus, alongside West Georgia, Trialeti, Karmir Berd, and Kizyl-Vank (Kushnareva, 1983, p. 10).

However, we do agree with V. Bakhshaliyev, who argues that "Sevan-Uzerlik" is an artificial construct, noting that Sevan-type ceramics were predominantly found in graves. In contrast, at Uzerliktepe, painted vessels constituted only 2% of the ceramic assemblage. He thus seriously questioned the conceptual validity of this term and the coherence of grouping these sites under a single cultural label (Bakhshaliyev, 2007, p. 171).

It is important to note that in some works, this ceramic complex has also been referred to using the term "Sevan-Artsakh" (Avetisyan, 2003, p. 53; Avetisyan & Bobokhyan, 2008, pp. 123-125; Smith *et al.*, 2009, p. 35). The application of this term appears to be influenced by political or ideological motivations. An illustrative example is the renaming of the archaeological site known as 'Gyzylveng' (official name – 'Gyzylburun'), situated in the Nakhchivan region of the Republic of Azerbaijan, where material remains from the Middle Bronze Age have been identified.

In some publication, the official toponym has been changed to "Karmir Vang" (Avetisyan & Bobokhyan, 2008, p. 124; Seyidov, 2021: 96; Smith, *et al.* 2009: 28). However, A. Spicyn (Spicyn, 1909, pp. 3-5, 11-15), V. Aliyev (Aliyev, 1977, pp. 6-8), K. Kushnareva (Kushnareva, 1983, pp. 10, 12, 14), K.

Rubinson (Rubinson, 1994, p. 204, Fig. 12.1) record this place as "Gyzylveng/Kyzylveng". However, K. Kushnareva later adopted the toponym "Karmir Vank," and introduced the term "KVC" (Karmir Vank Culture) to describe this culture (Kushnareva, 1993, p. 164; 1994, pp. 128-132). Therefore, we are confronted with a politically motivated approach aimed at eliminating Azerbaijani toponyms in academic sources.

Another problem is the dating of not only Uzerliktepe but also of all sites across the South Caucasus. In the 1960s, A. Martirosyan dated the Uzerliktepe archaeological site to the late phase of the Middle Bronze Age (Martirosyan, 1964, p. 56). Nevertheless, in the 1990s, K. Rubinson proposed a new chronological framework based on radiocarbon and stratigraphic analysis at Dinkha Tepe, situated southeast of Lake Urmia. According to this updated chronology, Level I at Uzerliktepe dates to 2000-1700 BCE, while levels II and III correspond to 1700-1500 BCE (Smith *et al.*, 2004, p. 3).

The new radiocarbon chronology opens up important avenues for interpretation. According to K. Kushnareva, the dating of the Institute of Archaeology of the USSR Academy of Sciences laboratory contains a high probability of statistical error. Based on this concern, she argued that the Uzerliktepe should primarily be associated with the final stage of the Karmir Berd culture (KBC). According to her, painted ceramics only appear in the middle strata at Uzerliktepe, while the lower layers lack such painted ceramics. She linked the final phase of the KBC to Mesopotamian jewellery dated no later than the 18th century BCE, suggesting that Uzerliktepe ceramics circulated within the KBC sphere during this time. Consequently, she proposed that the site should be placed in a chronological horizon that ends by the 18th century BCE (Kushnareva, 1994, p. 127). As we have shown above, new radiocarbon dating from Uzerliktepe indicates dates extending from the late 18th to the early 17th century BCE (from a depth of 2.87 m, Area 1, Square D, structure D1-21 – "channel"). During the 2023 excavation, the deepest cultural layer was recorded at 4.41 m (Area 2 of Square H, at the bottom of Structure H2-18, the storage pit).

In general, the chronology of the Uzerliktepe site was established during the 20th century through comparative analysis of ceramics. This approach relied on drawing a "bridge of comparison" between Uzerliktepe's pottery and the stratigraphic

sequences of surrounding archaeological complexes. Today, however, much of the settlement remains intact, offering the potential for more accurate, laboratory-based dating through the analysis of organic materials. Despite this potential, the notion of a unified "Sevan-Uzerlik culture" remains a subject of academic controversy (Kushnareva, 1994, pp. 118, 127).

However, scholars continue to debate the origins and definition of the Middle Bronze Age cultural horizon in the South Caucasus. This horizon has been referred to in the archaeological literature as the "Van-Urmia painted pottery," the "Trialeti culture," the "Tazakend culture," the "Nakhchivan culture," among other designations.

Many researchers identify the Nakhchivan-Urmia basin as the primary centre of this ceramic complex (Belli & Bakhshaliyev, 2001, p. 51; Bakhshaliyev, 2007, p. 171). Some Iranian archaeologists, such as R. Velayati, S. Mirzaee, and

H. Khanali, support this latter viewpoint to some extent. According to their statements, the chronology and cultural origins of Uzerliktepe remain uncertain (Velayati, Mirzaee & Khanali, 2017, pp. 29, 34).

RESULTS

Based on the contours of the structures (such as storage pits, hearths, and floors) visible in the wall profiles supported by elevation measurements, it is possible to form a preliminary understanding of the stratigraphic sequence of Square D and, potentially, across the entire site. Our analysis of Area D1 indicates four building layers (Figs. 15, 16). The primary evidence is the visible clay floor layers and large storage pits, which are evident in sections. This interpretation is further supported by the repeated and comparable thickness of these layers, as recorded through elevation data.



Fig. 15. Uzerliktepe, profile contours of clay floor layers on the eastern section of Area D1.

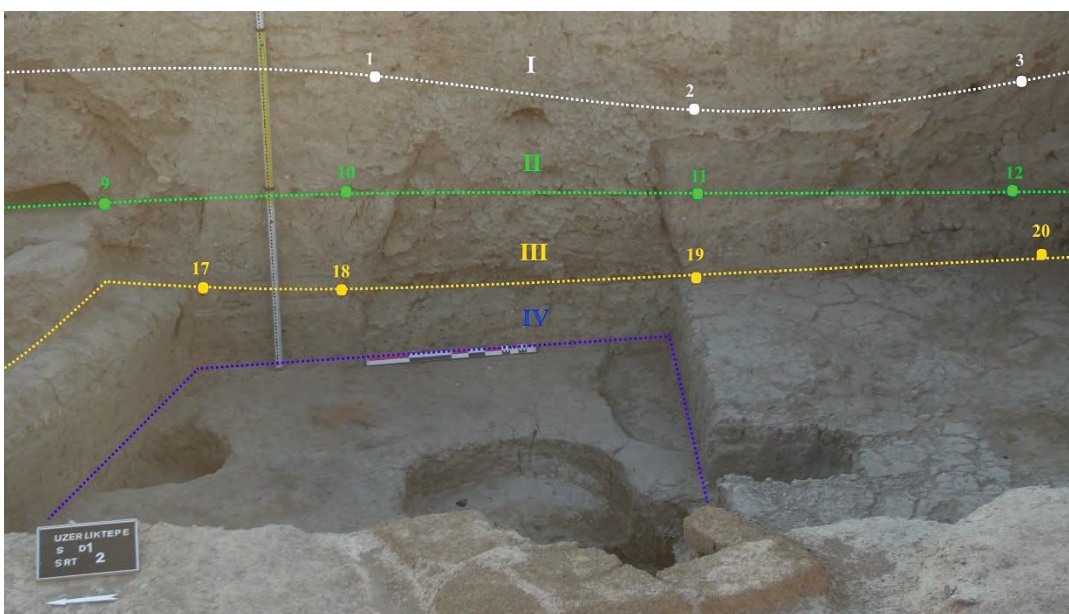


Fig. 16. Uzerliktepe. Stratigraphic division of the wall of the eastern section of Area D1. The boundaries of the clay floor layers are indicated by horizontal colored dashed lines and horizontal measurement points (1, 2, 3; 9, 10, 11, 12; 17, 18, 19, 20). The building layers (I, II, III, IV) are marked with vertical colored stripes.

Why do we use the term “building layer”? Some layers may have been formed contemporaneously without any significant occupational hiatus. As earlier floors deteriorated due to subsidence, heat exposure, other damages, or poor sanitary conditions, new clay floors, approximately 0.5 meters thick, were laid directly over the older ones as part of regular maintenance or renewal activities.

It should be noted that the thickness of these new floor layers had been determined based on the vertical measurements between recorded elevation points. For example, Figure 15 shows that point 1, associated with the floor of Building Layer I, is located at 1.46 m, while point 10, associated with Layer II, is at 1.9 m, resulting in a difference of 0.44 m. The interval between point 10 and point 18 (Layer III, at 2.44 m) is 0.54 m. The depth range for layer IV has been calculated from structures D1-22 to D1-26, excluding structure D1-27. The difference between the upper surface of Layer III and Layer IV again approximates 0.5 m. These consistent vertical intervals support the identification of four

successive construction episodes within this excavation area.

Why were the layers about 0.5 m thick? We believe the answer to this question can be better understood by comparing the thickness of associated architectural elements preserved in stratified contexts. A comparative analysis of features from Area B1 (Structure B1-2 low wall/fence, Figures 17 & 18) and Area D1 (D1-14) provides relevant insight (Fig. 5).

Structure B1-2, a semi-circular wall or fence (Fig. 17, 18), is built on the floor at a depth of 2 m. Its height is approximately 0.5 m, with a width of about 0.3 m. Postholes at the upper part of the wall indicate it supported structures, likely roofing elements. Similarly, structure D1-14 (wall) in Area D1 (Figs. 6, 19), also dated to Building Layer II, is built on a floor surface at a similar depth and exhibits identical dimensions (ca. 0.5 m in height, 0.3 m. in width), again with postholes for roof-bearing supports.

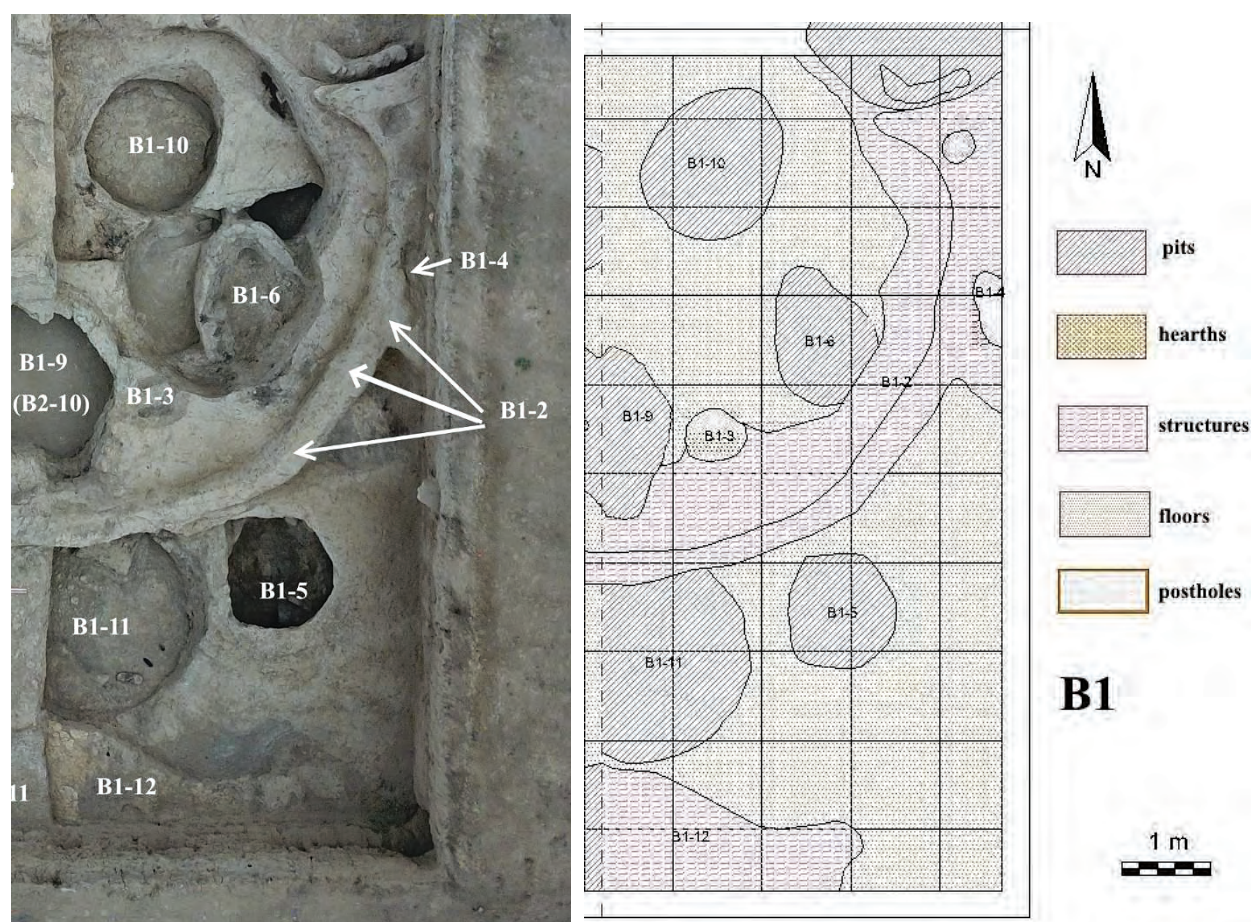


Fig. 17. Uzerliktepe, Area B1. Drone image and schematic plan from the second phase of investigations (captured on 10/18/2022)



Fig. 18. Uzerliktepe, Area B1. First phase of investigations (04/14/2022), Structure B1-2 (fragment of a wall made of clay blocks).



Fig. 19. Uzerliktepe, Area D1. First phase of investigation (06/22/2022), Structure D1-14 (fragment of a wall made of clay blocks).

These observations indicate that walls were constructed to a standard height of roughly 0.5m from the living surface. When the floor deteriorated, the residents laid a new floor directly above. For this purpose, the area was levelled, some of the remains of the clay blocks on it were

demolished and thrown into the pits (Fig. 8; Fig. 11, structure E2-5; Fig. 13), and the pits were filled with waste. The new clay floor was applied up to the tops of the standing walls (barriers), resting on the old floor, with the total height reaching approximately 0.5 meters. Therefore, the thickness

of the floors made of clay mortar in the section profile is approximately 0.5 m per building phase. Each visible clay floor in the sections shows a rebuilt occupational phase.

Usually, in archaeological interpretation, the presence of superimposed floor layers does not automatically equate to distinct cultural horizons. Stratigraphic variation may reflect architectural maintenance or short-term renovation rather than shifts in cultural practices or chronology. The definition of discrete cultural horizons requires chronological resolution, which can be achieved through the radiocarbon dating of in situ charcoal or other organic remains found in the layers. This approach will help determine whether the four construction phases identified at Uzerliktepe correspond to successive chronological horizons or represent architectural renovations within a broader contemporaneous occupation.

Notably, earlier excavations at the eastern flank of the settlement, conducted in the 1950s, led

Kushnareva to propose the existence of three construction phases in this area (Kushnareva, 1994, p. 118). Current data from the western sectors now enable a re-evaluation and potential integration of these earlier interpretations within a more robust stratigraphic and chronological framework.

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GANJA REGION KURGAN ARCHAEOLOGICAL PROJECT 2018-2024

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Abstract

In June-July 2024, within a month, archaeological excavations were carried out at the Late Bronze-Early Iron Age settlement of Tava Tepe in the Agstafa region within the framework of joint scientific cooperation between the Center for Archaeological Research in the Mediterranean and the Near East (CAMNES) located in Florence, Italy, and the University of Catania and the Institute of Archaeology, Ethnography and Anthropology of ANAS, in cooperation with European specialists. Based on the research of previous years and the structure uncovered during this year, we concluded that the monument was used as a place of worship in the Late Bronze Age. On the territory, a round structure was discovered, where ritual activities were performed, including a layer of ash in the very centre, up to 1 m thick, as well as household utensils with food remains, animal bones, household items, hearths, and pintaders. Additionally, anthropomorphic clay figures with hands oriented to the sky and other materials were found. You could say it was all done here in a ritual, and people would come here and eat.

Keywords: Late Bronze-Early Iron Age, Khojaly-Gadabay Culture, Cultic Site, Clay Figurines, Textile Tools, Food Remains

INTRODUCTION

The monument, situated at an altitude of 30-35 meters, was recorded by Najaf Museyibli in 2005 during field research in the Agstafa region, based on information provided by local residents. Then, based on ground archaeological research conducted in 2006-2007, N. Museyibli gave preliminary details on the monument in 2007 and 2021, and T. Akhundov did so in 2006, based on archaeological research conducted by the Azerbaijani-French international archaeological expedition. Based on samples of ground clay, N. Museyibli attributed the monument to the developed stage of the Khojaly-Gadabay culture, or rather to the 11th-9th centuries BC. T. Akhundov also noted that the Tava-Tepe monument is the

residence of the Khojaly-Gadabay tradition and dated it to the end of the 2nd millennium (Akhundov, 2000).

The area chosen for archaeological excavations was not only quite important at the initial stage of studying the monument, but numerous small and medium-sized ceramics, as well as samples of large jugs, were also immediately noticeable. Considering that in the Azerbaijani language, the terms "tava" or "tabag" literally mean a saucepan or frying pan, it is undoubtedly the rich samples of ceramics found on its top cover that played a key role in assigning the current name of the monument. The relatively steep slopes of the hill on which the monument is located are surrounded by "flowing" depressions around the entire perimeter.

The Tava Tepe monument is located on a natural hill 41°10'30.4" east longitude, 45°30'51.0" north latitude, about 2.5 km northeast of the village of "Ashagi Kasaman", 1.5 km from the river bed (Fig. 1), covering an area of more than two hectares. The hill is surrounded by steep slopes in the northeast and southwest directions. The monument differs in height from the surrounding hills, except on the south side; its shape is quite irregular and is surrounded by depressions. The surroundings of hilly and rugged valley slopes provide natural protection, effectively blocking access to the hill.

MATERIAL AND METHODS

The GaRKAP 2024 expedition took place between June 10 and July 7, 2024, with its primary objectives being to excavate the Tava Tepe settlement (Figs. 1-2) and to study and restore objects and ceramic vessels discovered in 2023 and 2024. The current year's archaeological excavations continued in areas C and F, starting in 2023 (Jalilov *et al.*, 2023). Due to

the need to expand the excavation area, the new area F was increased, bringing the total area (previous excavation area 410 m², newly opened area 150 m²) to 560 m². (Fig. 2).

First, the research work began on the southern side of the hill. Thus, it was decided to open the other half of the semicircle, which was likely a place of worship for the people of the Late Bronze-Early Iron Age, as discovered in area F. The excavations were initially continued along the semicircle of "locus 3" (where the pottery depot was traced). After that, the eastern and western sides and the centre zone of area F of the monument were opened, revealing the entire circle's circumference. The archaeological materials obtained during these processes were documented and collected. Many of them were taken for analysis, especially food residue samples from household utensils. These analyses will also allow us to determine the diet of that time in the future.



Fig. 1. Localisation of the Tava Tepe settlement in Western Azerbaijan. © Base map: Google Satellite.



Fig. 2. General view from southeast of Area B, Area C, and Area F at the end of the June-July 2024 archaeological mission.

RESULTS

With the expansion of the excavation pit at Site C starting in 2022 and the continuation of work at Site F to its south, the 2024 mission provided a better understanding of the transitions between the two main occupation phases of the site (i.e., Phase I – c. 1500–1100 BCE, and Phase II – 1100–700 BCE). Previous excavations had confirmed that the Earthen Architecture at Site C dated to Bronze Age I–II (Manning *et al.*, 2018, p. 1548). In contrast, the interpretation of the structures found at Site F was immediately more complex.

Based on initial radiocarbon analyses, this site has been dated to the Late Bronze Age (1438–1256 BCE (93.1%) 2σCal) and was assessed as a ceremonial context only. It contained a circular hearth with a thick ash layer on top of a large circular structure and was located around a votive set of ceramic vessels (Laneri *et al.*, 2024, p. 77).

However, the excavations conducted in June and July 2024 revealed a more complex picture. The previous layer of this structure consisted of a large, round pseudo-kitchen soil architecture with the remains of a hearth. Additionally, about 8 round sediments were found, each with traces of fire that could have been used as a hearth for cooking inside

dishes. The uniqueness of this discovery is confirmed by the presence around the hearths of sets of grey ceramic vessels found on the floor and stone tools made of river stones, which could be used as spoons.

Another square-shaped hearth was found next to it, and a covered entrance was placed on the ground, marked by the presence of four wooden pillars laid in an east-west direction, two of which were placed on a circular base of stones and surrounded the entrance. In addition, such a unique circular architecture was surrounded by postholes, indicating a wooden palisade had been built around it. In addition, the circular structure was located at the highest point of the Tava Tepe hill (Fig. 3), so it was probably known from the Kura River, especially through the covered entrance.

Such a position could be key in establishing communication for communities moving along the Kura River and west through the Caucasus. Considering that the second stage of its occupation occurred during the Urartian period, Tava Tepe, from a geographical and political-cultural perspective, could become a key crossroads for ties between western Iran, the Pontic region, and Eastern Anatolia.

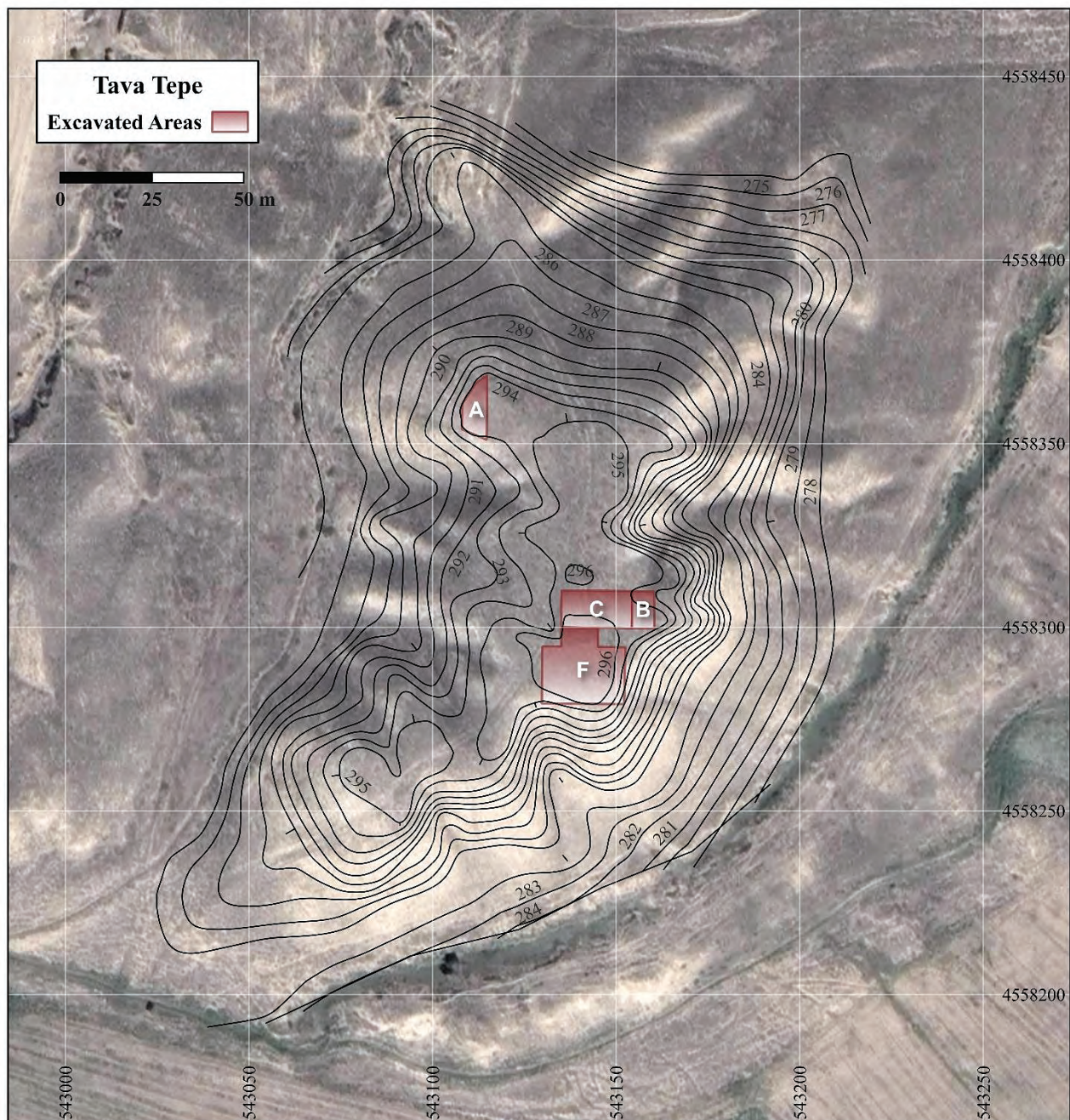


Fig. 3. Topographic map of Tava Tepe. © Base map: Google Satellite.

Square F: Round building excavation. Archaeological work carried out by GaRKAP in 2024 aimed to excavate this previously poorly understood area. However, the area plays a crucial role in interpreting the ground and potentially understanding the relationships between life stages. In 2023, three concentric rows of earthenware walls were uncovered, surrounded by ceramic vessels, clay figurines and other stone objects, which are probably the remains of ceremonial offerings (Laneri *et al.* 2024: 73). When the excavations began, the entire area surrounded by the earthenware was observed to be covered with a dense layer of brown clay, which probably

corresponds to the last phase of its use and served as a ceremonial closure of the structure. This phase concluded with the votive deposit of food and figurines in the vicinity, which was associated with the previous material culture. In addition, the architecture is complemented by a small circle built in the centre above the earthen round platform (Fig. 4). A thick layer of ash was found inside, and in the centre was a very friable clay pot with animal bones and tokens. This suggests it is part of a similar “continuous fire” seen from the surrounding area, especially in the Kura River basin.



Fig. 4. Fireplace of the last phase of use of the circular structure in Area F, superimposed on the previous fireplace after the sealing layer.

In the lower part of this structure, an incredible discovery was made, and a large terrestrial architecture was discovered, dating to an earlier stage (which for now will be associated with the culture of the Late Bronze Age (LBA). Its outer annular boundary was cut

into virgin soil, and several beds were found in the area of the inner sediment. These posts are probably the remains of a wooden palisade surrounding the first and outer wall of such a monumental kitchen, the diameter of which was about 15 meters. In addition, this circular sediment, according to preliminary analysis, is filled with a high density of animal bones, mainly cattle, which have been logged on them. During the kitchen's use, this exterior space was apparently where the food was discarded after consumption. At the same time, the wooden poles of the palisade must be dismantled after the end of the use of the structure, before its compaction and laying of votive inserts on the bones of animals.

As mentioned above, this complex is geometrically bounded by the central element of architectural features related to the earth and wooden architecture, the innermost "specific circles" of the circular earthen wall (Fig. 5).



Fig. 5. Arial photo of the circular pseudo-kitchen showing the general concentric pattern given by the earthen and mudbrick walls and the circuit of postholes around the structure.

Archaeological work last summer revealed the presence of a series of layers of ash and highly combustible organic material originating from the centre's focus (Fig. 6a); this indicates that, due to traces of fire inside eight small semicircular ovens built into an earthen circular wall, these depressions were used for cooking. Cookware was placed upside down in the centre of one of the small hearths until the last sealing of the central kitchen (Fig. 6a, 6e). Another feature of particular interest is that clay tokens were found in the kitchen area marked by a thick layer of ash, along with animal bones burned at high temperature (Fig. 6b-c); these tokens resemble the shape of bread and may indicate elements related to food exchange or barter.

Another feature associated with fire found in the kitchen facility is an almost rectilinear earthen adobe fireplace, inside which a thick, ashy layer was built.

However, it should be noted that a large number of containers used for food preparation and consumption were found on the floor of the entire structure, completely and in place (Fig. 7a). Some of these vessels were assembled into a small container (possibly intended for drinking), a large container (probably for food consumption), and a cooking container (Fig. 7b). As mentioned, stone tools, metal pendants, beads, and buttons were found along with ceramic vessels (Fig. 7c-e).



Fig. 6. Central fireplace (a) of the first phase of the structure and related findings: clay tokens (b), high-fired small bones (c), one pottery vessel found upside down within one of the clay housings (d).



Fig. 7. Inner deposit on the structure floor with in situ vessels (a) around the central fireplace of the first use phase. The material assemblage includes pottery vessels, probably forming sets (b), stone objects (c), and small metal objects (d-e).



Fig. 8. Eastern entrance to the circular structure, with two postholes supporting the covering.

Access to the entire structure is determined from the east side (Fig. 8). It consisted of four rows of large wooden posts and was probably located on the roof, as evidenced by traces of firewood on the floor below.

In any case, the structural context found in the F field made it possible to determine at least the function of this habitat area. It was probably an ancient dining hall, a center of encounters - even rituals - among the population involved in various stages of the site's occupation.

Sealing it with a thick brown layer of dirt and storing "food containers" on the floor directs this structure to the ritual interpretation associated with preparing and exchanging food. In the final step, the circular characterisation and voicing of ceramic vessels and clay figures around the sealed structure above this layer, along with the associated fire, further confirm this (Fig. 9).

In addition, several clay forms found on the site suggested that they could be used as a "mark" for bread baked at the hearth's central point, to distinguish families and tribes and display their corresponding «property». As already highlighted in 2023, the roof of the circular structure is believed to be supported by large wooden posts, three of which were found in place. After the last mission, the circle of wooden posts was fully opened to cover the entire structure.



Fig. 9. Votive objects deposited within two pits on top of the sealed structure. One contained one metal buckle within one jug (a), the other an assemblage of anthropomorphic ceramic figurines (b-c).

Fields A, B and C: Early Iron Age residential quarters and semi-underground features of the Late Bronze Age. In the course of excavations carried out in Tava Tepe over the past three years, archaeologists have discovered three areas (Fields A, B and C), where two different stages are Stage II (ca. 999-773 BC) and Stage I (1420-1207 BC (95.4%)). The next Stage II is characterised by tiny ceramic vessels with applied or preserved sliding decorative motifs (Mammana *et al.*, 2023; Laneri *et al.*, 2024, p. 91). From an architectural point of view, this stage is characterised by the presence of many

areas reserved for rectangular houses (Fig. 10), built using a mixture of wood and raw materials, or specialised craft production (for example, making metal, ceramics and flour), or food storage (for example, large pita found in houses or near houses). In addition, the floors of some houses are still covered with trouser carpets, which should be a typical characteristic of these houses. A feature of one of the houses is the presence of decorative motifs made of gypsum (Fig. 10 b) – mainly geometric, but in some of them, there are also human and animal figures, which in some cases are still found in semi-stable characteristics in houses (for example, in water bodies).

In connection with the previous phase I, this period coincides with the creation and monumental scale of the previously described ceremonial cuisine. The field is characterised by large, circular, semi-underground properties, common in A and B (Laneri *et al.*, 2024, p. 74). In the case of the feature found in area B, this indicates traces of artisanal production with the presence of ceramic seals and stone scrubs, which were probably used to decorate large pithoi pots dating back to the scrub period (Laneri *et al.*, 2024, p. 72). This is demonstrated by the pithos, which were found inside the same circular semi-subterranean feature and were most likely used to store water or flour because this vessel was almost circular and had a flat edge.

DISCUSSION

If we briefly look at the monument's artefacts, we will see that ceramic products prevail. The vessels are represented mainly by bowls, bowlers, lobes, vases, and large utility jugs. Among the hundreds of clay pots seized from the circular structure were more bowls and boilers. Similar vessels can be found in the Ganja-Kazakh and Garabagh regions.

The discovery of pintaders or seals registered as other clay products is characteristic of the region. Different opinions have been expressed in the archaeological literature about their use. In the last scientific article written about pintaders or seals, the purpose of their use was widely touched upon. As a result, along with many other functions, conclusions were drawn, such as its use during religious rites, services, and rituals of the society of the last Bronze to first Iron Age, equating bread with the symbol of the sun (Najafov, 2024).

Among the ceramic products of the Tava Tepe monument, we can cite tools used in weaving,

which functioned as weight stones. They are mainly objects cut from unusable pottery. Only one weight stone is made of raw ceramic in the shape of a trapezoid, where thread traces can be observed. These weighted stones are rarely found in grave monuments. They are mainly found in residential areas.

Among the clay materials, the clay anthropomorphic figures found at different levels along the same vertical line of the F area of the monument are interesting. Their hands are raised to the sky, and clothing patterns are depicted on them. The belt on the figures representing women is embedded in the body, while the belts on the male figures are shown prominently on the body. It should also be noted that belt samples discovered from the Late Bronze and Early Iron Age graves were mainly found in burial chambers belonging to male individuals (Ashurov, 2019).

The monument's metalwork includes a bronze knife, buttons, and ornaments. The bronze beads discovered here are similar to those found in the graves of the Chovdar necropolis, dating back to the 11th–9th centuries BC. The same can be said about the agate beads.

A similar structure of round clay brick was discovered in the nearby Saritepe monument in the centre of the Tava-Tepe monument. However, its surroundings were not built with a round building. From there, pottery was purchased with leftover food and drink. The author claims that these are products brought to visit. In addition, zoomorphic figures, pintaders, and seals were seized. The researcher notes that this is a place of worship where people perform a ritual. In addition, he suggests that, according to Strabo's works, a temple dedicated to the Albanian god existed in western Albania in the 1st century BC. The presence here (in Agstafa) of a discovered place of worship is an ancient stage in the existence of temple property in Azerbaijan (Narimanov, 1960). In addition, many researchers have noted the presence of an altar marked with ceramics in the graves of the Late Bronze Age, the first Iron Age (Narimanov, 1962).

Materials obtained from the Tava Tepe monument are characteristic of the Khojaly Gadabay culture. Based on the analysis results, it can be concluded that the monument is one of the oldest known cultural sites. Here, you can trace the entire development stage of the Khojaly-Gadabay culture.



Fig. 10. Hut datable to Phase II excavated during 2024 (a). Decorative element in baked clay with spirals and twirls (b), placed within the northern earthen wall, and two clay stamps with a spiral motif (c) and pseudo-swastika pattern (d) recovered within the perimeter of the hut.

CONCLUSIONS

Summing up the work carried out by GaRKAP, the archaeological mission at Tava Tepe has ultimately revealed the existence of a large circular structure dating back to the LBA period, which must have played an important role in facilitating food exchange between communities moving within the region, especially between the Kura River basin and the Lesser Caucasus Mountains. The subsequent period demonstrates a changed society characterised by settled forms of pastoralism (Reinhold, 2017, p. 359), which was likely encouraged by the further westward expansion of the Urartian empire (Salvini, 2021, p. 139; Liverani, 1988, pp. 735-767).

In addition, other sites in Western Azerbaijan (e.g. Babadervish, Yasti Tepe, Sarvan Tepe, Sarı Tepe, İlmalı Tepe and Shomu Tepe) (Aliyev, 1976; Najafov, 2012; Najafov, 2014; Narimanov & Khalilov, 1962; Jalilov & Alasgarov, 2010), as well as other sites in the South Caucasus (e.g. Mtsvane Gora, Nazarlebi, Kohvle Gora, Gekharot, Metsamor, Dvin) (Erb-Satullo & Jakhviani, 2022; Blocher *et al.*, 2023; Heinsch *et al.*, 2012; Badalyan *et al.*, 2014; Smith & Leon, 2014; Khanzadyan *et al.*, 1973; Kushnareva, 1977) exhibit similar characteristic elements, thereby indicating the existence of cultural commonalities among changing communities, which, although nomadic or transhumant, although they continued to interact with the natural landscape in their forms of social interaction, they had already begun to understand the importance of agricultural activities. For this reason, food preparation and consumption began to assume primary importance and became a rule regulated by ceremony, defining new forms of social behaviour.

CONCLUSIONS OF THE PROJECT

The Kurgan Archaeological Project (GARKAP) in Western Azerbaijan, i.e., the Ganja region, started in 2018, and the following goals have been achieved in the first seven years:

- Mapping hundreds of mounds in the territory of Uzun Rama (Goranboy district) using advanced archaeological research methods, in this work in collaboration with Dr. Andrea Ricci from the University of Kiel in Germany (Laneri *et al.* 2019, Pappalardo & Laneri 2023; Ricci *et al.*, 2024).
- Excavation of a late 4th-millennium BC mound (Kura-Araks period) on the Uzun Rama plateau, excavation of two Iron Age mounds at Heydar Aliyev Park in Ganja with a mound about

18 meters in diameter and a burial room size of 5x7 meters (Laneri *et al.*, 2019; Laneri *et al.*, 2020).

- Protection and, if necessary, recovery of found items related to burial equipment.
- Investigating human, animal, and plant remains found in the context of burial, as well as scientific analysis of burial specimens recognised in the grave (archaeobotany).
- The creation of the first virtual archaeological park dedicated to Caucasian mounds (V-KAP: Virtual Mound Archaeological Park) and the beginning of planning the process of creating the Kurgan Archaeological Park in Ganja/Goranboy/Goygol, including the Heydar Aliyev Park in the city of Ganja. This project aims to develop regional tourism (Pappalardo, 2021). The project will be implemented in cooperation with the State Agency for Tourism of the Republic of Azerbaijan.

– Documenting ceramic objects found in the territory of Uzun Rama, in mounds previously excavated by co-director Bakhtiyar Jalilov, and these finds are stored in the Baku Academy of Sciences. In particular, the activities were carried out to create ceramic chronotypes of the Caucasian necropolis, including photographing, making sketches, and systematically describing complete forms related to the equipment of grave rooms (Jalilov, 2018; Jalilov *et al.*, 2023; Laneri *et al.*, p. 20).

– Archaeological study of the settlement of Tava Tepe, located in the Agstafa region; after surveying the surface of this settlement, located on a hill near the middle of the Kura River, the project opened four excavations in the central part of the hill. It began surveying the mounds adjacent to the settlement.

– Start activities to protect and restore items found in the residential areas of Uzun Rama and Tava Tepe.

– Carry out paleobotanical, mineralogical, and chemical analysis of organic and inorganic deposits obtained from Tapa Tepe to increase knowledge about the South Caucasus population, especially on production and environmental topics.

– Opening the central hearth in section F of the Tava Tepe district emphasises the technique of processing materials using fire, aiming to raise knowledge about the South Caucasus population and the Kura River's middle valley.

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GARAJAMIRLI AND BEYOND: AZERBAIJAN-GERMAN PROJECT. PRELIMINARY REPORT ON THE EXCAVATIONS AT GURBAN TEPE AND THE SURVEY IN SEYIDLAR 2023-2024

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Abstract

In recent years, the most extensive architectural complex, the palace on Gurban Tepe, and the largest building of the ancient period, have been uncovered at Garajamirli. It is a centre of power of probably supra-regional importance. Targeted investigations in the last two excavation campaigns provided information on the planning and construction of the large mud-brick building on Gurban Tepe. The construction plan and technical details are modelled on those of the Achaemenid capitals. However, interesting changes to the plan can be observed in several places, which were made at short notice. The builder-owner had to respond to the fact that trained specialists from the empire's centres were no longer available to the desired extent towards the end of the construction work. The discovery of a further architectural complex at Seyidlar, only a few kilometres from the residence at Garajamirli, makes it clear that the Persians developed the Caucasus region much more intensively than previously assumed and known from other parts of the Achaemenid Empire. Finally, a hoard of sigloi from Zaqatala falls within the same time horizon. The coins, minted in the early 5th century BC, could have been brought there by soldiers serving the Great King.

Keywords: Iron Age, Achaemenids, Palace Architecture, Column Bases, Pottery, Sigloi

INTRODUCTION

In 2023-2024, the Azerbaijani-German team led by Jeyhun Eminli and Florian Knauß continued the archaeological investigations at Garajamirli, which had begun in 2006 under the direction of Ilyas Babaev (†), Iulon Gagoshidze and Florian Knauß and had since been continued with brief interruptions from 2018 to 2021 led by Emil Iskenderov (†) (For earlier reports on the excavations at Garajamirli see Babaev *et al.*, 2006; Babaev *et al.*, 2009; Knauss *et al.*, 2010; Babaev & Knauß, 2010; Babaev & Knauss, 2016). The excavation team included Khayala Firuzlu, Matthias Gütte, Leyla Hasanova, Sevinj Huseynova, Namig Huseynli, Kristina Junker, Eva Knauß, Katharina Knauß, and Gregor Lindermayr.

In the decades-long research debate on the extent to which the *imitatio regis* mentioned in Xenophon's *Cyropaedia* (Xenophon, *Cyropaedia*, Book 8, Chapter 6) took place. Whether genuine Achaemenid architecture also spread beyond the

Persian heartland, uncovering the residence at Garajamirli proved to be a game-changer. The largest ancient monumental architecture in the Caucasus region, the mud-brick building on Gurban Tepe, has clearly settled the question (Lordkipanidze, 2000, pp. 9-11; Bill, 2010, pp. 24-25). The latter was sceptical about a permanent Persian presence in the Caucasus region at a time when the site on Gurban Tepe had not yet been uncovered. However, specialists in the field have since recognised that we are dealing with a network of Achaemenid residences, of which Garajamirli is the most impressive to date (see *e.g.*, Khatchadourian 2016, p. 146 with note 43, p. 223; Boucharlat, 2023, p. 45; Messerschmidt, 2021, pp. 676-677). Persian architects and artisans were at work here, and there can be little doubt that it was not a local vassal of the Great King, but a Persian official who resided in the palace on Gurban Tepe. However, even if the results of the excavations so far provide an impressive picture of Achaemenid

rule on the north-western border of their empire, there are still unanswered questions concerning the building and its history that we have tried to clarify in the last two campaigns.

Excavation on the Gurban Tepe

The ground plan of the palace on Gurban Tepe (Fig. 1), dating back to around 480/70 BC, was almost completely known from previous excavations. However, we had set ourselves the goal of clarifying the last remaining unanswered questions about the architecture of the palace on Gurban Tepe. This concerned the design and function of individual rooms (for the characterisation and functions of Iron Age palaces, see Nielsen 2001; Knauf & Mattern, 2013), the construction planning process, and the execution of various trades, as well as access to the building from the east. Targeted exploratory excavations were undertaken for this purpose. In general, this confirmed the picture already gained during earlier campaigns: the large mud-brick building was erected on virgin soil, which had been cleared of vegetation and levelled before construction, as evidenced by ash and charcoal remains. Charcoal fragments under one of the column bases provided a radiocarbon date around 480 BC. The site must therefore have been levelled for the palace's construction at this time. The original ground plan, as indicated by the gravel foundations of varying thickness, was modified in a few details during the construction phase. After completion of the shell, skilled workers were only available to a limited extent, as evidenced by the varying quality of workmanship, particularly in the ornamentation of the column bases. Later alterations are not recognisable. Pottery and other small finds on the clay floors from the construction period were again extremely sparse. In contrast, in the ruins of the abandoned palace in 2024, we again found hearths and pottery from two successive post-settlement phases of the late Iron Age. (For the post-settlement phases, *cf.* Babaev *et al.*, 2006, pp. 296–299, 316–318; Babaev & Knauss, 2016, pp. 163–164, 173–175). Individual objects were buried in the recent past (20th century). It cannot be assigned to any recognisable context.

Strength and Appearance of the Outer Walls

The laying of the mud bricks for the outer walls exhibited peculiarities at various points of the

palace, which gave rise to fundamental considerations. In former years, particularly in wall M6 in the west, we observed that the two outer rows of seven lines of bricks were separated from the others by a continuous joint. In contrast, at M11 in the south, we could no longer find any regular mud bricks on the outer edge of the wall, but only a homogeneous mass of rammed earth.

A sounding in the south-west corner in area Q7 showed the same findings in 2023. We observed the continuous joint here in both M6 and M11 (Fig. 1). It was also evident that the two outer lines of mud bricks only begin at a level of approximately 0.50 m above the floor (Fig. 2), but at this point, they rise to a height of at least 0.91 m. In 2024, a sounding in the north-east of the complex, in area W14, confirmed this finding. There, too, the regular outer wall M9 is “only” five mud bricks thick (Fig. 3). Thus, our hypothesis that the outer wall, which was five mud bricks thick throughout, was fronted by a “banqueting wall” of considerable height is correct.

Change of Plan in Room XXI (Three-Column Hall)

The finding in R. XXI (Room XXI) with three columns in a row, which are not precisely on the same axis, was unusual from the outset. Another special feature is that the floor level in this three-column hall is almost half a meter higher than in the neighbouring rooms. Even though a slight south-north gradient can generally be observed in the palace complex, this finding stands out. As we already knew from an earlier sounding that the eastern of the three torus bases with stepped plinth (B19) did not have a horizontal underside, we suspected there had been a change of plan during the construction process. In fact, in 2023, during a limited deep trench in area R9, we encountered the circular gravel foundation of a bell base roughly centered between B19 and B28 at a height level that corresponds fairly closely to the access areas in rooms R. II and R. V (Fig. 4). The foundation also lies precisely on the axis of the column bases B2, B1, B21 and B11 in the neighboring rooms to the north (*cf.* Fig. 1). The gravel foundation correlates in terms of level with a door hinge stone in the spandrel of the northern door cheek. Both belong to a first draft plan, which was realised at least up to the foundation. Above this, we found another hinged door, stone levelled with the lower edges of the three, finally offset torus bases.





Fig. 2. Gurban Tepe, area Q7, lowest mud brick layer in the south-west corner of the complex



Fig. 3. Gurban Tepe, area W14, room R. XXXV, viewed from the south.

A double column position with bell bases was initially planned in R. XXI, as realised in R. XXXIV, but this was not executed. Instead, three torus bases

were moved here, but these were not yet completed, i.e., they were not levelled horizontally on the underside. To be able to use them at all, they had to be placed in a deep bed of clay. It is possible that the inadequate stonemasonry also explains the later cracking of two bases (B28 and B32) in this room. The reasons for the change of plan can only be surmised. Likely, there were not enough finished bell bases for R. XXI when the columns had to be moved there. It can also be observed in other areas of the palace – for example, in R. V or R. XXXIV – that experienced stonemasons were not available on Gurban Tepe until the building was completed (Babaev & Knauss, 2016, p. 164, with Figs. 22–23). Whether they were needed elsewhere from a particular point in time or were absent for health reasons must forever remain an open question. In any case, they made do with half-finished workpieces in some rooms or had the bases completed by less experienced workers. In room R. XXI, they were perhaps concerned that the unstable bedding of the bases might prove inadequate – after all, there was another inhabited room above it – and tried to make up for this deficiency with an additional base. This solution met the users' requirements. Also, it proved to be "load-bearing" in the literal sense, as the excavation findings show that the ceiling only collapsed with the general decay of the building, after the original occupants had left the palace for some time.



Fig. 4. Gurban Tepe, area R9, gravel foundation of a bell base in R. XXI between torus bases B28 (left) and B19 (right)

Unusual Building Finds in the North-East of the Palace (Area U/V/W 13/14)

The interior design in the north-east of the palace (Fig. 1) deviates significantly from the clear order of the south wing, with almost five identical groups of rooms accessed from a corridor (R. XVIII). In particular, the northern corridor R. X does not extend to the outer wall M15 at its eastern end, as in the south. However, a room R. XXII, which, like R. XXXV, functioned as an adjoining room to the larger two-column hall (R. XXXIV) and was also only accessible via the latter (Fig. 5). A total of six rooms in the north-east of the complex – in addition to the aforementioned group of rooms, the two-columned room R. XXXVI with the rear chamber R. XXXIX and room R. XXXIII – can only be accessed via the same entrance from the northern corridor (R. X) (Fig. 1). It therefore seemed obvious to us that the passage from corridor R. X to the elongated room R. XXXIII was once closed by a door. However, a corresponding sounding in 2023 showed that this was not the case (Fig. 6). We must admit that the system in which doors secured specific entrances, while others were not, is not self-explanatory.

It is unique that a comparatively small columned hall (R. XXXIV) has two adjoining rooms. We therefore wanted to clarify whether there was any evidence of special use in R. XXII. However, the complete uncovering of the floor – a grey clay screeds several centimetres thick – revealed neither installations nor small finds that would indicate a special purpose. Furthermore, this side room was not separated from the two-column hall R. XXXIV by a door, as revealed by a small, deep trench in the south-west of the passage.

The north-eastern corner room R. XXXV has the appearance we expected (Figs. 3, 7). It has no columns and can only be entered through an entrance in the south-east from room R. XXXIV. However, we could not find evidence of a staircase, which we thought was possible. There was therefore only a single staircase to the upper floor in the south-west corner of the building in room R. XXV (Babaev & Knauf 2016, 158–159 with Fig. 25). In the southwest of R. XXXV, in a hearth that must be assigned to the later of the two post-settlement phases (2nd/1st century BC), we found an almost completely preserved coarse cooking pot (Fig. 8).



Fig. 5. Gurban Tepe, area U 13/14, room R. XXII from the east.



Fig. 6. Gurban Tepe, area V13, passage from corridor R. X to room R. XXXIII



Fig. 7. Gurban Tepe, area W14, room R. XXXV from the southwest.



Fig. 8. Cooking pot (small find no. 3) from a hearth in R. XXXV, post-settlement phase, 2nd/1st century BC.

Investigation of Wall M7

Finally, in area U11, we dismantled the footbridge we had left standing during our 2011 investigations. This allowed us to rule out the possibility that there had been an entrance from corridor R. X to the large audience chamber (R. IX) after all. Therefore, the large reception hall could only be accessed from the vestibule in the east (R. XXVI) and through the narrow passageway in the north-west.

To date, we have no written sources on this once undoubtedly important complex that would help us to gain a deeper understanding of Persian rule in this region. Although we must assume that various rooms of the palace on Gurban Tepe served administrative purposes, there were no seals among the sparse material of small finds, nor were we able to observe inscriptions – for example, on the limestone column bases – that provided clues as to the owner of the house and the name of the site. Previous campaigns did not realise our vague hopes of finding a foundation deposit with corresponding information. In 2023, a sondage aimed at this in a conspicuous place in M7 in area U11 unfortunately remained unsuccessful.

Preparation of the Limestone Bases After Their Relocation (Exposure of B41 IN R. V)

In the six-column hall R.V., we have observed different stages of work on the limestone torus bases in recent campaigns. This led us to consider that the stonemasonry work in the palace was interrupted at an arbitrary point in time by external influences and was no longer completed because the stonemasons were no longer available. At the last remaining base in the room, we now hoped to find a more advanced state of work than at B31 and even more so at the still completely unfinished bases B5, B6, B9 and B10 (Babaev & Knauss 2016, p. 158, 164, Figs. 22–23). Unfortunately, it turned out

that B41 was also in the same unfinished state as the four southern bases (Fig. 9). The stonemason was therefore called away just as he was preparing to finish B31. This also suggests that only a few, possibly just one, competently trained specialist was available on site in the final phase. Just above the inspection area, we observed fragments of charred wooden beams and ash, probably from the room's ceiling, as in previous campaigns in other parts of the R. V.



Fig. 9. Gurban Tepe, area V9, torus base B41 in the six-column hall R. V.



Fig. 10. Gurban Tepe, area R12, bell base B38 in room R. XXVII.

Room XXVII with Room XXX at the Rear

Finally, room R. XXVII is also a special case. Initial investigations in earlier years had shown that this room, unlike the other four neighbouring rooms to the west and east of R. XXVII, did not have a double colonnade. Since the 2018 campaign, however, we have known that a single-column hall was originally also planned for room R. XXXIV in the north-east corner of the palace, but was not realised for unknown reasons. In 2019, we had

already uncovered the central bell base B38 (Fig. 10) using a sounding in R. XXVII. By completely uncovering this room and the adjoining chamber R. XXX to the south in 2023, we not only wanted to make one of these groups of rooms characteristic of the south wing visible in its entirety (Fig. 11), but also to answer the previously unanswered question of whether these rooms were closed off by doors. Finally, we hoped to find indications of the original function of these two rooms on the floor. Unfortunately, we did not find any remains of installations or minor artefacts that would allow us to make a statement in this regard. We can only explain the characteristic paucity of finds in all the rooms of the palace – which stands in striking contrast to the wealth of pottery finds in the contemporaneous settlement of Dara Yatakh and the Northern Complex – by an orderly departure of the former inhabitants and by the assumption that carpets lay on the floor in almost all the rooms. At the same absolute height level as in the audience hall (R. IX), a several-centimetre-thick, hard grey clay layer formed the walking surface here, as in the other rooms uncovered so far. The floor showed traces of fire or small charcoal remains in a few narrowly defined places. In the north-west corner of R. XXVII, we found a door hinge stone (Fig. 12), which obviously did not exist in the passageway to the rear chamber R. XXX. The cylindrical door hinge stone has a diameter of 44 cm and a height of 33 cm. The surface is smoothed and shows traces of use, while the non-visible outer side is roughly pointed. A round area with a diameter of 17 cm is initially recessed by 2 cm at the upper edge. This contains a further, non-centred hollow with a diameter of 10 cm and a depth of 6 cm.

Bell base B38 (Fig. 10), exposed during the 2023 excavation of room R. XXVII, was recovered the following year due to its fragile state of preservation (The different base types and their variants from Garajamirli were recently described and analysed in detail; Knauf & Gütte, 2021, pp. 221–225, Figs. 2–5). It lay on a pebble foundation, approximately 30 centimetres thick. It was taken to the Archaeological Museum of Baku after the excavation work was completed.



Fig. 11. Gurban Tepe, area R11/12-Q11/12, space group R. XXVII/R. XXX with bell base B38.



Fig. 12. Gurban Tepe, area R12, door hinge stone.

Eastern Entrance to Portico R XXVI

With its portico of 6 x 2 columns, the eastern facade of the palace on Gurban Tepe made an imposing impression on visitors approaching from the propylon on Ideal Tepe (Fig. 13). In some Achaemenid complexes in Iran, however, the building rises above its surroundings with a base or at least has a staircase leading up to the entrance hall. Furthermore, the entrances there – for example, in Qal'eh Kali (Dusting 2014, pp. 51–53, Fig. 5.4, 5.5) – are often flanked by low limestone walls. An initial sounding ten years ago did not reveal any evidence of a lower “road level” in the east. Two sondages in R14 and U14 should now clarify the appearance of the main entrance to the

palace. The excavation findings are clear: the portico – like the entire building – is at “street level”, and there is no evidence of paving or gravel on the path to the propylon. However, it does not seem impossible that large fragments of smooth limestone slabs, which were not found in situ but only 1.00 meters east of the portico corner M13/M17 (Figs. 14a-b), once belonged to an enclosure of the entrance hall.

Immediately east of the outer wall M15 in area U14 at approximately 7.00 meters north, we uncovered a burnt surface (Fig. 15) on which several fragments of a beautiful carinated bowl (Fig. 16) lay, the shape of which follows Achaemenid models. Stratigraphically, it belongs to a younger occupation horizon, which can be assigned to a period when parts of the palace had already fallen into ruin. In the flat excavated surface of the southern part of area U14, as well as in the southern and eastern profiles, there are signs of collapsed mud brick walls (Fig. 17). An older firing horizon, visible in the same southern profile, runs from the west, from the running horizon of the enclosure, diagonally upwards over the bricks to the east. A deep trench in U14 on a small area to the east of M15 uncovered charcoal and ash under the palace's walking surface, obviously from the slash-and-burn clearing and levelling of the building site before the actual start of construction work.



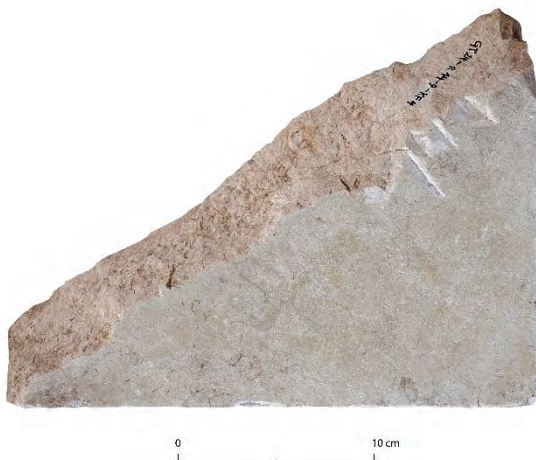
Fig. 13. View of the propylon on Ideal Tepe from the east and the palace on Gurban Tepe in the background, reconstruction drawing by T. Bitterer/F. Haschner/F. Knauf (2013).



a



Fig. 15. Gurban Tepe, hearth east of M15 (area U14).



b

Fig. 14 a-b. Fragments of two rectangular limestone slabs from Area R14.



Fig. 16: Carinated bowl with handle, from the hearth east of M15 (area U14).



Fig. 17. Gurban Tepe, area U14, planum, as well as south and east profiles from the north: The oldest fire horizon overlies truncated mud bricks, while the younger ash layer correlates with the hearth in Fig. 15.



Fig. 18. Gurban Tepe, area R14, wall corner M13/M17 from the east; in front of M17, a skeleton is visible in the profile, approximately 0.70 meters above the walking surface.

In front of the south-eastern corner of the vestibule (Fig. 18), we found a burial without remains of clothes or grave goods. The upper edge of the burial pit lies clearly above the two known post-settlement horizons, dating to the 4th/3rd and 2nd/1st centuries BC. A more precise dating was not possible. In this area, we excavated a hard clay floor over a layer of fine pebbles, which served as a running horizon, on which the mentioned fragments of limestone slabs (Fig. 14a-b) were found in a secondary layer.

Pottery

The pottery found on Gurban Tepe during the last two campaigns (Figs. 19-22) corresponds to the spectrum known from earlier years: predominantly red, hard-fired wares; the open shapes, in particular, show a clear relationship to Achaemenid bowl forms. A few exceptionally high-quality examples are made of excellent clay and have skinny walls. In rare cases, they have a red coating. However, we found hardly any significant pottery on the floors of the palace building. Most of the finds come from later layers of the post-settlement phases, which we would provisionally like to assign to the period soon after the building was abandoned in the late 4th century BC and to a significantly later period (2nd to 1st century BC). While the beautiful carinated bowl (Figs. 16, 20.2)

and the cooking pot (Figs. 8, 22) from U14 and W14 can each be linked to a post-Achaemenid horizon, the rest of the pottery can hardly be assigned stratigraphically with certainty.

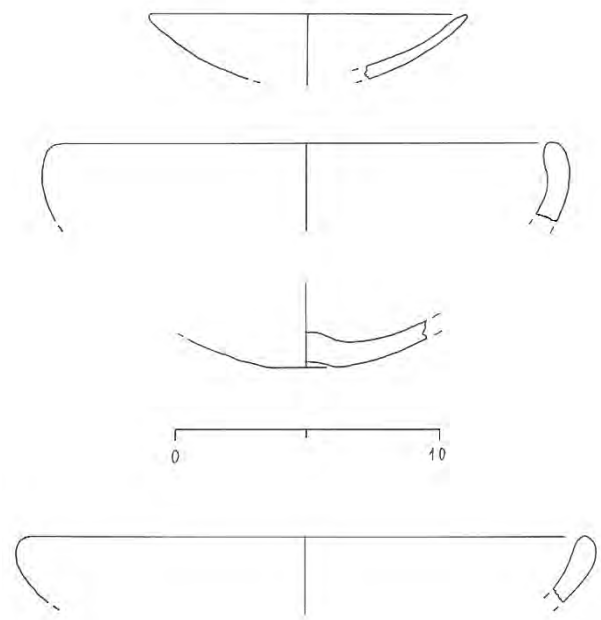


Fig. 19. Gurban Tepe 2023, bowls (open shapes).

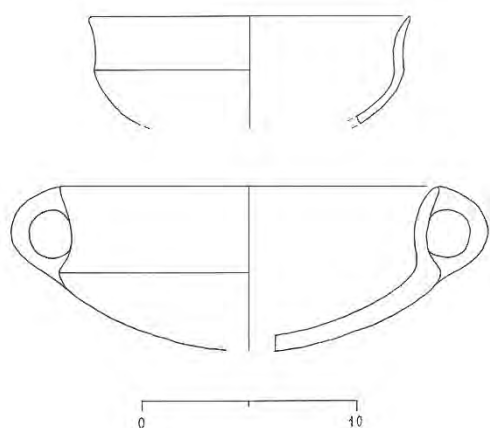


Fig. 20. Gurban Tepe 2024, bowls (open shapes).

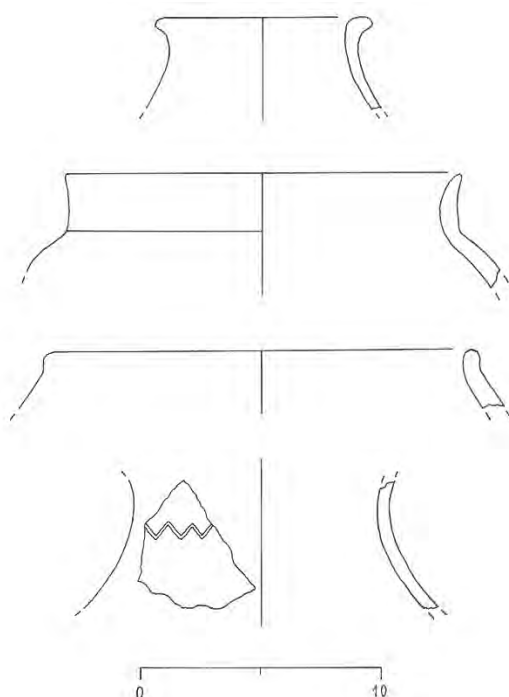


Fig. 21. Gurban Tepe 2023-2024, closed shapes.

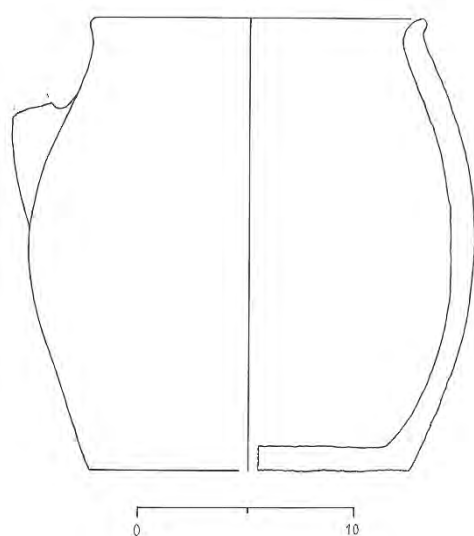


Fig. 22. Gurban Tepe 2024, cooking pot.

Site Inspection Near Seyidlar

As early as 2014, we were made aware of a torus fragment, a find at Seyidlar – about 6 km south-east of Gurban Tepe (Figs. 23) (Knauß & Gütte, 2025, p. 75; Knauß, forthcoming). In 2021, Emil Iskenderov and Jeyhun Eminli inspected several limestone bases in the Seyidlar village, following information provided by the local population.

With the kind support of the regional administration in Samukh (Mrs. Kamala Khalilova), we revisited the storage sites of the impressive finds in 2023. We documented the already known bases (Fig. 24) as well as another bell base (Fig. 25) in the village of Seyidlar. We then conducted site inspections at two locations that a resident, Hamid Hasanov, kindly brought to our attention. At a site approximately 950 m north of Seyidlar – hereafter referred to as Seyidlar A – we encountered a large number of large limestone fragments on the edge of the path (Fig. 26). On the harvested field, we then picked up numerous sherds of red, beige, and light grey ware, as well as other limestone fragments, some of which were worked. The pottery, especially fragments of drinking bowls and pithos sherds, can be dated to the late Iron Age and shows striking similarities with the material found in Garajamirli. Some of the sherds can be definitively linked to the Achaemenid period (Fig. 27, 1-2).

Approximately 250 meters north of Seyidlar – we have provisionally designated this site as Seyidlar B. We also found pottery sherds on the surface that can be dated to the Late Iron Age. However, the frequency and quality of the ceramic material at this site cannot be compared with Seyidlar A.

In 2024, during a meeting with Mr. Saidov from *British Petroleum*, it was clarified that approximately 20 years ago, as part of the archaeological investigations preceding the construction of the BTC pipeline, the site we refer to as Seyidlar A, located 950 meters north of the village, was also investigated. Many of the finds observed there the previous year were likely already unearthed. The comparison of the excavation areas of these investigations at the beginning of the 2000s with our inspection in 2023 made it clear that a new excavation there would be pointless, as large parts of the site had already been ransacked.

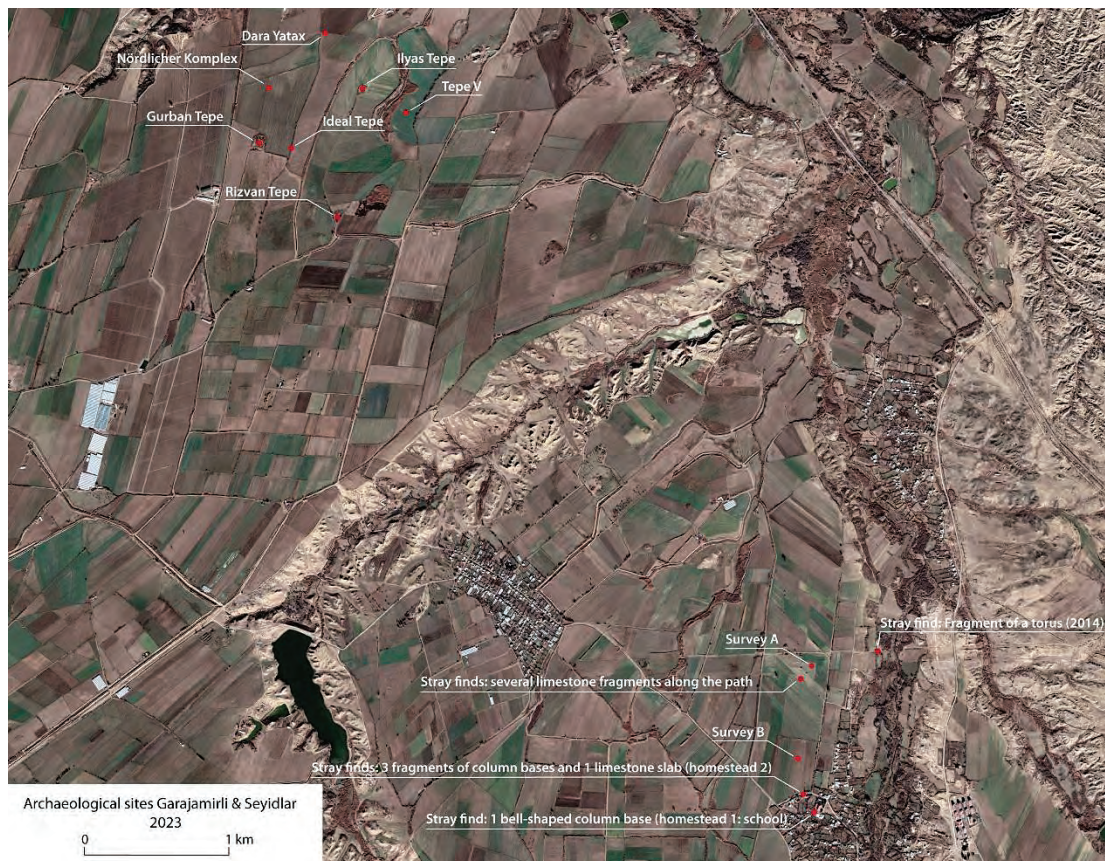


Fig. 23. Find spots near Garajamirli and Seyidlar.



Fig. 24. Seyidlar, fragment of a torus base in the garden of an unknown person.



Fig. 26. Seyidlar A, farmland with numerous surface finds of Late Iron Age pottery and worked limestone.



Fig. 25. Seyidlar, bell base in the garden of Teyyub Alekberov

This leaves us with the somewhat unsatisfactory finding that, although we can state that there was monumental architecture at Seyidlar, its appearance, function, and exact date can no longer be determined with certainty. However, the pottery collected in 2023 and the architectural fragments found there suggest that it was approximately contemporaneous with the residence at Garajamirli or an approximate dating to the 5th to 4th century BC. A monumental building can be assumed to have a high probability due to the high-quality building sculpture.

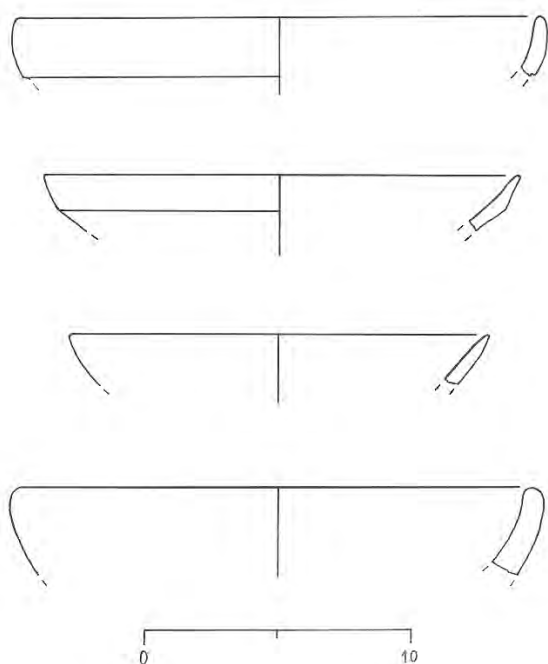


Fig. 27: Seyidlar A, bowls (open shapes).



Fig. 28: Coin hoard from Zaqatala, 48 of formerly 53 Sigloi.



Fig. 29: Hoard from Zaqatala, Siglos no. 17, face and back side.

Hoard Found at Zaqatala

By a lucky coincidence, we were introduced to the collector Mezakhir Gurbanov in Ganja, who presented us with a hoard of 53 sigloi (Fig. 28-30) from his coin collection. The man who found these coins years ago near Zaqatala in north-west Azerbaijan has unfortunately passed away. The sigloi, which were probably minted in one of the Western satrapies, are the first known Achaemenid coins to be found in Azerbaijan. Most of these coins from this hoard are *fourrées* (*subaerati*), with only three specimens having the regular nominal weight. The coin types suggest a minting date of around 480 BC, while the wear and counterstamp indicate that the hoard was deposited between 450 and 420 BC. This coin find highlights the significant Persian presence in this region during the first half of the 5th century BC, as documented in architectural monuments, as sigloi were typically minted to pay Greek mercenaries serving the Great King. A comprehensive scientific analysis and publication of this significant discovery are currently underway.



Fig. 30: Hoard from Zaqatala, Siglos no. 22, face and back side.

CONCLUSIONS

In international research, the discovery of the residence at Garajamirli has radically changed the historical picture of the Caucasus region for the period from the late 6th to the end of the 4th century BC. Experts in various international publications and congresses worldwide have recently emphasised its extraordinary scientific significance. The central building at Garajamirli, the palace on Gurban Tepe, provides surprising insights into the planning and construction of such an enormous complex. It can be seen that, although the design was modelled on Persepolis, various changes were made to the individual rooms during the construction period. The reasons for this can only be surmised at this point.

The palace on Gurban Tepe is the largest known antiquity building in the entire Caucasus region

(Azerbaijan, Georgia, Armenia). It is exceptionally well preserved. Therefore, a complete and permanent uncovering and presentation under protective architecture would be desirable for monument preservation and touristic aspects.

The survey findings at Seyidlar A can be described as downright sensational. The density of monumental structures from the “ancient period” is unrivalled outside Iran. It is clear that this region was well-developed and must have been connected to international transportation routes. Unfortunately, the appearance (ground plan) and function of the complex at Seyidlar A, as well as its relationship to the residence at Garajamirli, cannot be clarified in detail, as the site was investigated years ago during the construction of the Baku-Ceyhan pipeline. Topography and comparisons with sites in Chaboukiani (Georgia) and Persis suggest that it could have been either a station on the famous Persian overland roads or a pavilion in a game park.

Investigations into the immediate and broader surroundings of the Garajamirli residence are essential for a deeper understanding of the region’s historical processes. A site south of the Kür settlement and the archaeological settlement Galaboynu near Naftalan offer promising options for considerably expanding our knowledge.

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DAMJILI CAVE: INVESTIGATING THE LATE PLEISTOCENE TO HOLOCENE

Edited by Yoshihiro Nishiaki, Azad Zeynalov and Yagub Mammadov

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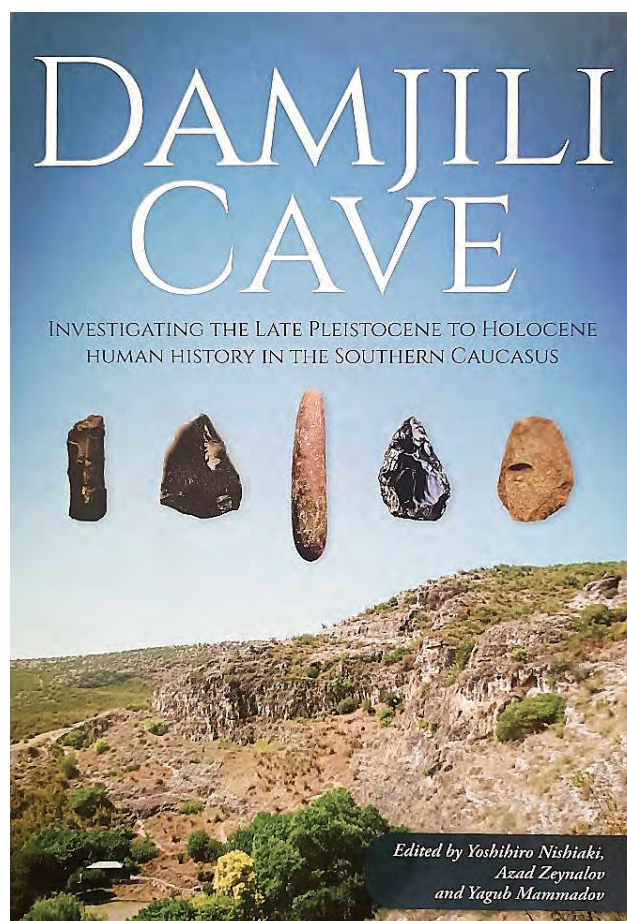
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The book "*Damjili Cave: Investigating the Late Pleistocene to Holocene Human History in the Southern Caucasus*", edited by Professor Yoshihiro Nishiaki, Dr Azad Zeynalov, and Dr Yagub Mammadov, is a significant academic study on the important prehistoric archaeological site in the South Caucasus. Professor Nishiaki's name requires no introduction. He is a true archaeological luminary, a member of the International Academy for Prehistory and Protohistory, and the Director of the University Museum at the University of Tokyo. His extensive investigations in Eastern and Central Asia, as well as numerous published articles and books on the prehistoric history of humankind (Nishiaki, 2011; Nishiaki & Akazawa, 2018; Nishiaki & Guliyev, 2020; Nishiaki, Maeda, & Arimura, 2022; Nishiaki, 2024), stand as a testament to the high scholarly quality of the presented volume. Co-editors are distinguished investigators with substantial backgrounds in the field above. Dr Azad Zeynalov is one of the leading specialists at the Institute of Archaeology and Anthropology and heads the Ganja-Gazakh Palaeolithic Archaeological Expedition. Dr Yagub Mammadov, a lecturer at Khazar University, specialises in early prehistory and the anthropology of the Caspian region. The presented book is the result of a collaborative project between Azerbaijani and Japanese researchers, who conducted extensive, multidisciplinary excavations at the site. Their work combines expertise in archaeology, paleoenvironmental science, and cultural history.



Damjili Cave, situated in the foothills of the Avey Mountains (Gazakh district of Azerbaijan Republic), is ideally positioned near a freshwater spring and rich vegetation. Therefore, a cave is an ideal location for long-term human occupation. The research presented in this volume confirms the site's extensive archaeological potential. Not only does it include Holocene layers relevant to the Neolithic period, but it also preserves Pleistocene deposits associated with the Middle Palaeolithic.

First and foremost, we would like to commend the book's excellent artistic design. The reputable American publishing house OXBOW has supported its publication. OXBOW specialises in releasing monographs, edited volumes, field reports of archaeological excavations, and reprints of classic archaeological works. This substantial folio edition comprises nearly 250 pages, printed on high-quality matte paper. The book is richly illustrated, featuring an impressive array of materials, including high-resolution photographs, detailed plans of archaeological sites, drawings of Neolithic tools, osteological specimens, ceramics, and other artefacts. In addition to the superb quality of the colour photographs, all plans and illustrations are characterised by a high degree of detail and are accompanied by appropriately scaled rulers. Each chapter is accompanied by an extensive bibliography featuring over 200 references, reflecting the authors' deep engagement with recent scholarship on investigated topics and archaeological sites in the South Caucasus and worldwide.

The book opens with a **Preface** and a **List of Participants** involved in the joint Japanese-Azerbaijani excavations at the Damjili Cave. A comprehensive **List of Illustrations** and **Tables** follows. Subsequently, the **First Chapter**, presented by an extensive **Introduction**¹, provides an overview of the site's significance, a detailed account of its excavation history, tracing back to the 1950s, and a description of its geological stratigraphy.

The **First Part** presents the history of field investigations conducted at Damjili Cave from 2016 to 2022. The **Second Chapter**² provides a detailed account of the archaeological reconnaissance survey in the Avey Mountains and its vicinity. A comprehensive list of all identified archaeological sites is supplemented with numerous photographs and an appended table. Authors concluded that in 2015-2016 surveys, they could discover a small number of prehistoric sites at Avey Mountain in the form of kurgans and artefact scatters.

In the **Third Chapter**³, the authors provide detailed information on the geomorphological settings around Damjili Cave. They present data on the cave's geographical environment, including a detailed topographic map and photographs. Particular attention is given to the topographic characteristics around the cliff base. To provide a comprehensive view of the excavation sites, the authors offer three-dimensional data generated by

SfM-MVS photogrammetry and a three-dimensional model of the Damjili Valley, accessible on the Sketchfab website.

Chapter Four⁴ is devoted to the archaeological excavations conducted at the Damjili Cave between 2016 and 2022. It is one of the most extensive chapters in the volume, preceded by a comprehensive introduction that includes a concise historical overview and a rationale for continuing large-scale excavations at the Damjili Cave archaeological site. The chapter presents the initial soundings in 2016 at Damjili Caves 1 and 2, accompanied by detailed schematic trench maps and photographic documentation. Particular emphasis is placed on the main trench excavations conducted in 2017-2022. This thorough study, which includes a description of excavation methodologies, provides the results and their analytical summary. According to the authors, the excavations have yielded a unique opportunity to trace the transition from the Mesolithic to the Neolithic period in the South Caucasus region. Moreover, the excavations at the rock shelter located east of Damjili Cave 2 have concluded that local inhabitants used this rock shelter during the Medieval and later periods to establish temporary camps and storage places.

Chapter Five⁵ presents the radiocarbon chronology for the cultural sequence of Damjili Cave. The dating of archaeological samples indicates that human occupation occurred intermittently during the Mesolithic, Neolithic, Chalcolithic, Bronze Age, and Medieval periods. The discovery of an impressive stratified sequence at a single archaeological site marks the first of its kind in the South Caucasus. The most significant outcome of this research is the establishment of the terminal phase of Neolithic occupations in the region, which dates back to approximately 5300 BC.

The **Sixth Chapter**⁶ is devoted to the luminescence dating of cultural deposits at Damjili Cave. Based on measurements of three different signals (quartz OSL and two polymineral IR50 and pIRIR150), the authors aim to determine the age of layers associated with Middle Palaeolithic and Mesolithic artefacts. Despite challenges in dose-rate assessment, the findings suggest these layers date to the Mesolithic period or are younger than 20,000 years. This contradiction, given the presence of Middle Palaeolithic tools, leads the authors to conclude that the studied artefacts may have been redeposited and are not in their original stratigraphic context. Due to the limited sampling,

further dating and excavation are recommended to clarify these results and gain a better understanding of the site's archaeological history.

The **Second Part** provides comprehensive information on artefacts and subsistence remains recovered at Damjili Cave from 2016 to 2022. The **Seventh Chapter**⁷ is devoted to lithic artefacts from Damjili Cave. Supplemented with numerous colour photographs and detailed drawings of the lithic artefacts, this section offers a complete impression of the stone tools (obsidian and non-obsidian) found in the cave during this period. This chapter examines Middle Palaeolithic lithic artefacts from Damjili Cave, suggesting that the site repeatedly served as a short-term camp during the late Middle Palaeolithic period. Archaeological layers appear to have been disturbed before or during the early Mesolithic, as indicated by the current artefact collection and the lack of comparable stratified assemblages in the region. The Gazakh region is considered a promising area for future Palaeolithic excavations. Middle Palaeolithic artefacts found at nearby sites such as Goytepe and Yatagh Yeri suggest a wider distribution of these materials.

The **Eighth Chapter**⁸ continues to develop the topic of lithic technology at Damjili Cave. In this chapter, Professor Nishiaki presents a detailed analysis of flaked stone artefacts from stratified Mesolithic to Bronze Age deposits at Damjili Cave, offering the first radiometrically dated lithic dataset in the South Caucasus. The study reveals two key insights: first, the cave served as a short-term occupation site across millennia, evidenced by the scarcity of cores and retouched tools. Second, the data indicate shifts in lithic technologies during the late Mesolithic and late Neolithic periods, with earlier transitional features suggesting continuity between the Mesolithic, Neolithic, and Chalcolithic periods. This study offers new insights into the region's prehistoric cultural evolution and identifies areas for further lithic analysis.

The brief **Ninth Chapter**⁹ addresses the fascinating topic of Mesolithic obsidian blade production technology at Damjili Cave. This chapter investigates these stone tools through fracture and wear (FW) analysis. Despite the limited sample size, the study identifies the use of pressure debitage for producing blades and bladelets, marking a significant technological practice in the region. The findings support the idea of early cultural interaction between the South Caucasus and the eastern Fertile Crescent before the

sixth millennium BC. Applying a verifiable analytical method offers a foundation for future comparative studies across different sites and periods. Further analysis of related obsidian assemblages, such as those from Haji Elamkhanli Tepe and Goytepe, is recommended to trace technological change to the spread of Neolithic type of economy.

Finally, the topic of stone tools at Damjili Cave is concluded in **Chapter Ten**¹⁰. This chapter describes the 37 potential ground stone artefacts collected through fieldwork. This chapter presents the analysis of ground stone artefacts recovered from Damjili Cave, offering valuable insights into Neolithic lifeways in the mountainous regions of the South Caucasus. The study identifies a notable increase in ground stone use during the late Neolithic phase (Unit 4.1/2), in contrast to the Mesolithic and early Neolithic levels (Unit 4.3/4 and Unit 5). Unfortunately, the small sample size limits the scope of the investigation. The Damjili findings align with other archaeological evidence, including architecture, ceramics, and plant remains, that indicate cultural changes during the later Neolithic period. The assemblage also expands our understanding of Neolithic occupation beyond the well-documented plain settlements of the Middle Kura Valley, marking Damjili as the first site in the region to demonstrate the use of ground stone tools in a cave setting. This chapter provides information on Neolithic cultural changes in the South Caucasus and highlights the significance of highland sites, such as Damjili, in understanding prehistoric socio-economic developments. Additional excavations are necessary to gain a deeper understanding of ground stone technology and its role in Neolithic communities.

Chapter Eleven¹¹ is devoted to the fascinating topic of Neolithic and Chalcolithic pottery from Damjili Cave. This chapter presents a detailed analysis of pottery assemblages from Damjili Cave, shedding light on the everyday practices of prehistoric inhabitants in the Southern Caucasus during the Neolithic and Chalcolithic periods. The study categorises the ceramics from Units 3 and 4 (Neolithic) into five distinct ware types: mineral-tempered, plant-tempered, coarse red-brown, grey powdery, and coarse orange wares. Coarse red-brown ware is the dominant type in both units, indicating its everyday use. Mineral-tempered and plant-tempered wares are present in Unit 4, matching similar findings from other Neolithic sites in the Southern Caucasus. Chalcolithic pottery from

Unit 3, especially the coarse red-brown ware, shows some differences compared to contemporaneous sites in the region. This may indicate local developments or ceramic traditions at Damjili Cave during the Chalcolithic. Thus, the authors proved the continuity and variation in ceramic production. The presented information helps understand cultural changes in the Southern Caucasus during these periods. Further research will be essential to clarify the nature and extent of the observed differences in Chalcolithic pottery.

The discovery and analysis of bones occupy a special place in the research on the Damjili Cave remains, as presented in **Chapter Twelve**¹². The author already had experience describing bone remains found at the settlements of Göytepe and Haji Elamkhanli (Arai, 2020; Arai, 2021). The excavation seasons at Damjili Cave yielded a surprisingly small number of osseous artefacts (only three) from the Mesolithic period, contrasting sharply with the abundant bone tools found at Neolithic settlements in alluvial plains. The production and use of bone tools, such as for hide working or tilling, appear to have occurred mainly at permanent settlements rather than in temporary or cave sites. A notable find is a Late Mesolithic boar tusk ornament that provides insight into the material culture of that time. So, the described artefact demonstrates the connection between Mesolithic hunter-gatherers and later Neolithic farming groups in the Southern Caucasus. The disappearance of this ornament type in the later Neolithic suggests a change in cultural identity. This revolutionary paradigm reflects a shift from Mesolithic traditions to Neolithic farmer culture.

Chapter Thirteen¹³ is devoted to a small stone figurine discovered by Azerbaijani archaeologist Ulviyya Safarova outside a stone-walled structure in Damjili Cave, which was later studied in detail in Japan. Based on seven radiocarbon dates, the figurine was found in a layer dated to approximately 6400–6100 cal BC. This finding was presented in a publication in a prestigious international journal (Nishiaki *et al.*, 2025) and caused a sensation. The figurine is tiny, measuring only 51 mm in length. No signs of intentional modification are present on the figurine except for engraving, the details of which are visible only through microscopic analysis. The pattern suggests that the artefact represents a human figure without identifiable sexual characteristics. Authors contend that the known Mesolithic sites in the South Caucasus region have not yielded recognisable

human figurines. At the same time, the Damjili Mesolithic figurine differs significantly from the Neolithic clay figurines popular in the Middle course of the Kura River and the Fertile Crescent, which demonstrate pronounced features characteristic of the female sex. The figurine's uniqueness could be a starting point for productive discussions about the symbolic significance of such Stone Age artworks.

Another topic, depending on Chapter Twelve, is **Chapter Fourteen**¹⁴, devoted to the macro-botanical remains from Damjili Cave. More than 70 sediment samples were collected from the main excavation for the carpological study. The total amount of sediment was 343 litres. This chapter presents the results of 29 samples. The macro-botanical remains from Damjili Cave provide significant insight into the development of plant use and early agricultural practices in the Middle Kura Valley. One of the most notable findings is the possible presence of cereals, which dates to a period contemporaneous with the Neolithic site of Göytepe (Nishiaki *et al.*, 2020). This suggests that there may have been early experimentation with or introduction of domesticated plant species during this time, although the evidence remains tentative. Importantly, there is no indication of tanning activities before 6000 cal BC, as inferred from the absence of specific plant taxa commonly associated with such practices. This absence shows that tanning had not been adopted or was not practised in a way that left archaeobotanical traces during this period. The intensive exploitation of *Celtis* species, a wild tree fruit, declines after Unit 4.3/4. This decline reflects a shift in subsistence strategies, indicating a move away from foraging as farming emerged.

The diversity of wild herbaceous plants in the Damjili record is relatively limited. Species such as *Chenopodium album*, representatives of the genera *Artemisia* and *Hyoscyamus* are among the few wild herbs identified, and their use may have had dietary, medicinal, or symbolic significance. Notably, the use of *Artemisia* is documented from as early as the Mesolithic period (Unit 5) and continues into the Neolithic, underscoring a long-standing tradition of utilising this plant. From a broader perspective, the archaeobotanical evidence suggests that the origins of crop cultivation in the Middle Kura Valley do not extend back beyond 6000 cal BC. Agriculture appears to have emerged abruptly in the archaeological record, aligning with the hypothesis that migrants from Southwest Asia

introduced it. However, this does not necessarily imply that these immigrants were the sole or even primary agents of agricultural adoption in the region. The persistence of local traditions, such as the continued use of *Artemisia*, indicates that the Neolithization of the Middle Kura Valley likely occurred through a process of cultural interaction and integration between incoming farming groups and the local hunter-gatherer populations. In summary, the macro-botanical data from Damjili Cave illustrate a complex and layered transition to agriculture in the region. While external influences played a role in introducing domesticated crops, local traditions endured and helped shape the specific character of Neolithic life in the Middle Kura Valley. This suggests a model of Neolithization characterised by continuity, adaptation, and cultural blending, rather than simple replacement or abrupt transformation.

The next part of the book, **Chapter Fifteen**¹⁵, focuses on the previous investigation. The faunal remains from Damjili Cave provide evidence of the early development of stock breeding in the South Caucasus. A key finding is the rapid incorporation of domestic ungulates into the local economy (Nishiaki, 2016). Analysis of sheep bones in this chapter shows that livestock was not used during the Late Mesolithic period. By the Neolithic period, the economy relied primarily on domestic ungulates, with small game serving as a supplementary resource. The decline in large game indicates a reduced role of hunting within the community. As hunting may have become less central, the role of pastoralism likely grew in importance, especially as small game species disappeared entirely by the Chalcolithic period.

The author considers that most of the faunal remains from Damjili are forest mammals. However, Mesolithic people seem to have had a broader hunting range, as evidenced by the frequent hunting of steppe gazelle. The findings must be interpreted in relation to other Neolithic sites in the region. Early farmers exploited a wide range of animal species, including both forest and steppe fauna. Evidence from both settlements and camps is necessary to understand early farming practices, including seasonal patterns, mobility, and the use of livestock. The faunal remains from Damjili show a clear transition from hunting and gathering to pastoralism in the South Caucasus. While wild animal exploitation continued, the Neolithic period marked a shift toward a livestock-based economy. When combined with data from

other regional sites, these remains clarify the subsistence strategies and socio-economic changes of early farming communities.

Chapter Sixteen¹⁶ is devoted to the Bronze Age and medieval pottery from Damjili Cave. The chapter on Bronze Age and medieval pottery from Damjili Cave examines changes in the site's use after the Mesolithic, Neolithic, and Chalcolithic periods. Based on the analysis of material remains from Units 1 and 2, the author identifies distinct patterns of occupation during the Early Bronze Age and the early medieval period. In the Early Bronze Age, the pottery assemblage is expedient and homogeneous, indicating limited investment in the site. The cave functioned as a temporary shelter or seasonal camp for small groups of farmers or herders, with minimal alteration to its environment. In the early medieval period, the cave shows evidence of more intensive and long-term use. Activities such as building, pit digging, and burials indicate permanent or semi-permanent occupation. Although direct evidence of religious practice is absent, the reoccupation of the cave may relate to the development of monasticism in the region during the late first millennium.

The pottery and other finds reflect connections to a broader regional network of exchange that supported the occupants of the cave. The contrast between the two periods shows that the social and cultural significance of the cave changed over time.

Further excavation and analysis are needed to clarify the specific roles and meanings assigned to Damjili Cave during each occupation phase. The pottery and other finds reflect connections to a broader regional network of exchange that supported the occupants of the cave. The contrast between the two periods shows that the social and cultural significance of the cave changed over time. Further excavation and analysis are needed to clarify the specific roles and meanings assigned to Damjili Cave during each occupation phase.

Finally, the **Seventeenth Chapter**¹⁷ summarises the research conducted at Damjili Cave in the context of the Neolithisation process in the South Caucasus. In the final chapter, editors present Damjili Cave as a key site for examining socio-economic transformations during the transition from the Mesolithic to the Neolithic in the South Caucasus. Its stratified sequence preserves continuous evidence across this period. Two main conclusions emerge from reading the volume. First, Neolithic culture developed through a combination of introduced elements from Southwest Asia and

local Mesolithic traditions. Cereal grains, domestic animals, sickle blades, grinding stones, and cobble-filled cooking pits reflect external influences. Second, there is clear evidence of technological continuity. The early Neolithic layers show minimal use of pottery. Obsidian remained dominant in tool production, with a continued emphasis on pressure flaking and the use of Mesolithic tool types. Bone artefacts and the use of *Artemisia* also indicate the persistence of earlier practices.

The shift to food production began in the late Mesolithic. Obsidian use increased, and northern-style microliths, such as the Chok-type, appeared. This mix of southern and northern elements points to complex cultural interactions at the end of the seventh millennium BC, possibly influenced by the 8.2 ka climate event.

Radiocarbon data indicate a minimal chronological gap between the Mesolithic and Neolithic phases in the Middle Kura River valley. The full adoption of a Neolithic economy around 6000 cal BC resulted from cumulative cultural exchanges during the late Mesolithic.

In addition to documenting the Mesolithic-Neolithic transition, the Damjili sequence contributes to the broader cultural history of the region, which dates back to the Middle Palaeolithic. The site remains essential for future research on prehistoric developments in the Southern Caucasus.

The book is also supplemented with an **Appendix** describing the research conducted at Damjili Cave during the 1955–1957 period by M. Guseinov (1957) and S.N. Zamyatin (1958). From reading these sections, it becomes clear that the

excavation of Damjili Cave was not a single, isolated campaign carried out recently, but rather a long-term endeavour enriched by contributions from an international team of competent specialists.

In conclusion, this study of the prehistoric period in the South Caucasus highlights the evaluation of stratigraphic, lithic, ceramic, osteological, botanical, and symbolic data.

The continuity and variability observed in lithic and ceramic assemblages, the appearance of domesticated species, the relevant role of symbolic artefacts, and the carpological evidence reflect a complex process of Neolithization in the South Caucasus.

The well-stratified deposits at the archaeological site make Damjili Cave an exceptional case of long-term human occupation in the region. The luminescence and radiocarbon dating enhance the proper interpretation of the real age of the found artefacts.

The understanding of the prehistory of the South Caucasus makes a meaningful contribution to broader discussions on the timing, nature, and pathways of cultural change in the ancient Near East. As noted by the editors in several chapters, continued excavations and comparative analysis will be crucial in deepening our understanding of prehistoric lifeways in the area.

Therefore, this book can be recommended as a handbook for both young and experienced researchers in archaeology and anthropology, who are deeply interested in the development of civilisation and culture in the South Caucasus and Azerbaijan.

Authorship of Chapters

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⁵ Yoshihiro Nishiaki

⁶ Toru Tamura and Yoshihiro Nishiaki

⁷ Yoshihiro Nishiaki

⁸ Yoshihiro Nishiaki

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¹³ Yoshihiro Nishiaki, Ulviyya Safarova, Fumika Ikeyama, & Yagub Mammadov

¹⁴ Chie Akashi

¹⁵ Saiji Arai

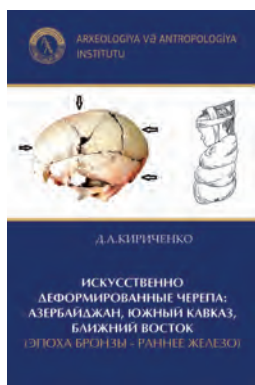
¹⁶ Kazuya Shimogama

¹⁷ Yoshihiro Nishiaki, Azad Zeynalov, and Yagub Mammadov

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BOOK ANNOUNCEMENTS



ARTIFICIALLY DEFORMED SKULLS: AZERBAIJAN, SOUTH CAUCASUS, AND THE NEAR EAST (BRONZE AGE - EARLY IRON AGE). Kirichenko Dmitry

The monograph attempts to summarise the available findings of skulls with artificial deformation from the Bronze Age to the Early Iron Age period in the territory of Azerbaijan, the South Caucasus, and the Near East. The book examines intentionally modified skulls from the region mentioned above, describes the archaeological sites where they were discovered, and, where possible, provides craniometric data and identifies the presumed anthropological type. The chronological framework of the work covers the period from the mid-4th millennium BC to the first half of the 1st millennium BC.



EARLY MEDIEVAL DEFENSIVE FORTIFICATIONS AND CASTLES OF NORTHWESTERN AZERBAIJAN Taleh Aliyev

The monograph is dedicated to castle cities, fortresses, defensive fortifications, and walls, as well as castle temples built in the early Middle Ages in northwestern Azerbaijan, which were important strategic points in Caucasian Albania. The work also provides information about watchtowers, defensive passages, and passes. The mentioned monuments have been the subject of archaeological research, and photos, plans, and tables of some material culture samples have been included in the text of the scientific work.



CHRISTIAN PERIOD ARCHAEOLOGICAL AND ARCHITECTURAL HERITAGE OF CAUCASIAN ALBANIA Natig Alishov

The monograph illuminates pre-Christian religious views and beliefs in Caucasian Albania, the process of Christianity's spread, and the spiritual and political situation in Caucasian Albania after the establishment of Islam. Detailed information is provided about the churches and monasteries discovered during archaeological field research conducted in the work.



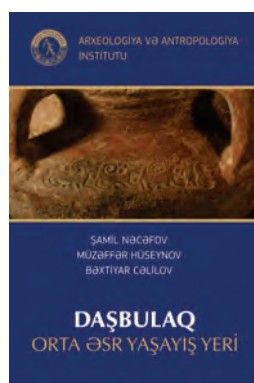
ANCIENT MEANS OF TRANSPORTATION IN AZERBAIJAN (4TH-1ST MILLENNIA BC). Anar Aleskerov

Based on archaeological materials, the comprehensive study of the history of ancient transportation in Azerbaijan has been conducted for the first time. The monograph is intended for researchers, students, and representatives of the general public.



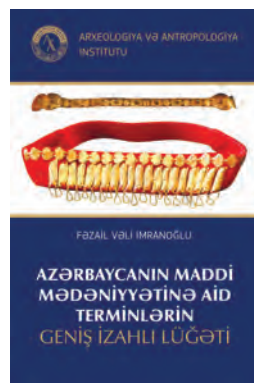
ANCIENT MONUMENTS OF ALBANIA IN GARABAGH Gulana Aliyeva

This work is the first monographic study dedicated to the study of ancient Albanian monuments in the Garabagh region of Azerbaijan. For the first time in historical and archaeological literature, these monuments are analysed in comparison with monuments from the other areas of Caucasian Albania. The monograph offers a scientific interpretation of the presence of synchronous, diverse burials within a single burial ground. Based on settlements such as Galatepe, Garatepe, Gurdtepe, Shortepe, Garakepektepe, Toyretepe, Uzerliktepe, Tezekend and burial grounds of Toyretepe, Galatepe, Garakobar, Govurgala, etc., one of the first attempts was made to comprehensively analyse all monuments, settlements and burials in Garabagh, identifying their typological features.



DASHBULAG MEDIEVAL SETTLEMENT Shamil Najafov, Muzaffar Huseynov, Bakhtiyar Jalilov

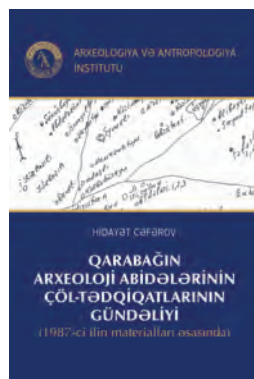
The book discusses the phased progress of archaeological excavations carried out in the medieval settlement area of the village of Dashbulag in the Shamkir region, the revealed production and economic buildings, household facilities, and numerous and diverse material cultural samples. Archaeological excavations in the settlement were carried out in three stages within the framework of archaeological research in new construction areas (construction of the BTC oil, CQBK and CQKBK gas pipelines in 2004-2005 and 2014). Life in the medieval village of Dashbulag, founded in the 9th century, was intense until the beginning of the 13th century, and in later periods it continued with certain intervals until the end of the 18th century.



COMPREHENSIVE EXPLANATORY DICTIONARY OF TERMS RELATED TO THE MATERIAL CULTURE OF AZERBAIJAN

Fazail Vali İmranoglu

In this dictionary, presented for the consideration of a wide readership, for the first time in the history of Azerbaijani ethnography, a detailed explanation of the most frequently used terms related to traditional material culture (settlements and dwellings, clothing and ornaments, food and drinks, folk means of transport and roads, as well as crafts), which is one of the essential problems of this science, and a list of the literature used are provided. The definition, description, classification, distribution area (geography), history of origin, and the development stage of each ethnographic term explained in the dictionary are consistently followed.



FIELD RESEARCH DIARY OF THE ARCHAEOLOGICAL MONUMENTS OF GARABAGH (BASED ON THE MATERIALS OF 1987)

Hidayat Jafarov

The monograph reflects the results of the field research conducted by the author in 1987 in Garabagh by the 2nd detachment of the Mil Garabagh archaeological expedition, based on the diary compiled during the expedition. The primary purpose of the field research was to investigate and map the coordinates of archaeological monuments containing the chronology from the Eneolithic period to the Middle Ages, and to conduct monitoring.

